



# 2021 TCFD Report

Moody's

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# A Message From Mark Kaye, Chief Financial Officer



As climate experts warn of the widespread consequences of climate change, and as the world moves to a new phase of pandemic management and responds to evolving geopolitical conflicts, Moody's commitment to climate leadership and our role in the transition to net-zero remain as important as ever.

Although our company is not a major greenhouse gas emitter, we know that our actions serve as a role model for responsible corporate climate practices, and as such, we have adopted ambitious, forward-looking sustainability practices not only within our organisation but across our value chain.

I am proud to say that 2021 was a year of considerable progress and accomplishment for Moody's. In support of our [Decarbonization Plan](#), we accelerated our commitment to achieve net-zero emissions across our operations and value chain to 2040 – ten years earlier than the Paris Agreement goals. In this report, we further announce that we were one of only a handful of companies to obtain the SBTi validation on our long-term net-zero science-based target by 2040.

We also bring clarity to the complex and interrelated macroeconomic, financial and social impacts of climate change through our comprehensive suite of award-winning environmental, social and governance (ESG) and Climate solutions. By providing our unique insights, we can help market participants advance their strategic resilience and transition to greener, more sustainable practices.

To best serve our customers, we continue to make considerable strides in enhancing our climate offerings. We expanded our data coverage of the physical risks posed by climate change with new sub-sovereign climate risk scores and introduced Temperature Alignment Data, a new tool that provides increased transparency on whether companies' net-zero commitments align to the actions necessary to restrict global warming to below 1.5°C.

Additionally, we acquired RMS, a leading global provider of climate and natural disaster risk modeling and analytics. As a result, we are now able to accurately capture the impact of numerous climate perils, such as floods, hurricanes and wildfires, both today and through the end of the century. This enables our customers to assess the financial impact of climate risk on their assets and investments, and to inform proactive risk management and organisational resilience.

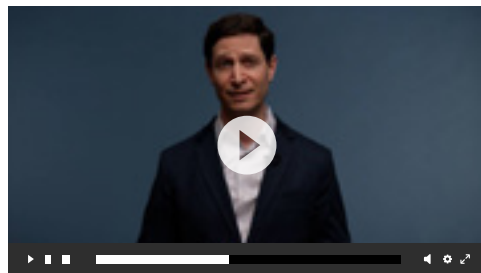
With the understanding that collective effort is required to solve climate challenges, we built on our long-standing commitment to work with a wide range of partners. In 2021, we became a Founding Member of the Net Zero Financial Services Provider Alliance (NZFSPA), part of the Glasgow Financial Alliance for Net Zero (GFANZ), and committed to align our relevant products and services to net-zero. Further, we expanded our involvement in the development of new climate and environmental financial disclosures through our continued work with the Task Force on Climate-related Financial Disclosures (TCFD) Secretariat and by joining the Taskforce on Nature-related Financial Disclosures (TNFD).

Following our active engagement at COP26, we published "Ready or Not?," a widely cited report that combined insights from various perspectives across Moody's. The report analyzed the climate risk exposure of carbon-intensive sectors – those whose transformation will be vital to the world's ability to halve emissions by 2030.

We are honoured to have been acknowledged for these milestones and for our corporate climate and sustainability efforts, including a top "A" score on climate action by CDP for the second consecutive year, and a designation as a supplier engagement leader.

In our fourth TCFD report, we reaffirm the alignment of our climate disclosures with TCFD's recommendations, as well as the evolutionary implementation of climate risk awareness into our business activities and overall strategy, as well as corporate governance and risk management activities. Looking ahead to our shared future, we remain committed to leading as a resilient company that supports better business, better lives and better solutions through a more sustainable global world.

**Mark Kaye**  
Chief Financial Officer  
Moody's Corporation



» Hear more from Mark Kaye, CFO

## ABOUT TCFD

The Financial Stability Board established the Task Force on Climate-related Financial Disclosures (TCFD) to develop recommendations for more effective climate-related reporting. The disclosure recommendations released by the TCFD are designed to i) "promote more informed investment, credit and insurance underwriting decisions," and ii) "enable stakeholders to better understand the concentrations of carbon-related assets in the financial sector and the financial system's exposure to climate-related risks."

The TCFD disclosure elements are structured around four thematic areas in which organizations operate: Governance, Strategy, Risk Management, and Metrics and Targets. These overarching themes are supported by key climate-related financial disclosures, referred to as recommendations, that populate the framework with information tailored to help investors and other stakeholders understand how reporting organizations assess and manage climate-related issues. Adoption of the TCFD framework helps promote climate resiliency, and can also support the identification and assessment of climate-related opportunities.

## MOODY'S AND TCFD

Moody's Corporation (Moody's) is a global integrated risk assessment firm that empowers organizations to make better decisions. The company's data, analytical solutions and insights help decision-makers identify opportunities and manage the risks of doing business with others. Moody's believes that greater transparency, more informed decisions and fair access to information open the door to shared progress.

Addressing climate-related risks is crucial for global economies to move toward more sustainable outcomes. Moody's strives to achieve best practice in transparency via the TCFD framework, which advances the standard for consistent and comparable climate-related disclosures. The use of innovative data and advanced analytics provides Moody's stakeholders with an in-depth understanding of risk exposure across the company's operations, suppliers and customers, as well as mitigation through its strategy and planning. By being a leader in this area, Moody's realizes its ambition of playing a pivotal role in accelerating market transformation to create more inclusive, sustainable economies. In addition, Moody's Chief Credit Officer serves as a member of the TCFD, providing insight as to what might constitute "decision useful" disclosures for investors and sharing Moody's own experience developing TCFD disclosures.

This publication is Moody's fourth annual TCFD Report, building on the public affirmation of support for the TCFD that the company's CEO and CFO signed in June 2017. Since then, Moody's has strengthened its own position on climate action, making significant progress in integrating climate and environmental, social and governance (ESG) considerations into the products and services offered to its customers, and in turn, supporting their strategies.

This edition of Moody's TCFD Report includes the results of its updated and enhanced climate scenario analysis. It also includes a progress update on how the company embeds climate considerations throughout its product and services offering, as well as outcomes from comprehensive TCFD engagement workshops across Moody's key business units to re-assess its current status, and future climate-related priorities. As per Moody's previous TCFD Report, forward-looking statements are applied to reflect its current expectations and assumptions given the best available research and modeling as of the date of this report. These statements may differ materially over time due to the complexity of variables and outcomes that contribute to Moody's future emissions scenarios.

## 2021 REPORT HIGHLIGHTS

- » Updated physical risk analysis to cover all global Moody's office locations and data centers assessed for exposure to six physical climate impacts (flood, windstorm, wildfire, heat stress, water stress and sea-level rise).
- » Enhanced physical risk analysis to assess downtime and remote working implications to Moody's office locations with the highest occupancy, including its headquarters, using newly acquired capabilities from RMS, a Moody's company.
- » Expanded transition risk analysis that considers both carbon pricing and renewable electricity costs.
- » Updated Moody's financial risk profile capturing broader climate considerations.
- » Assessed climate maturity of critical suppliers.
- » Incorporated Moody's customer exposure to high-emitting sectors.
- » Continued achievement of 100% renewable electricity across the company's operations, as well as strong progress against science-based targets and offset of historical emissions since Moody's became a public company in 2000.
- » Announced Moody's validated long-term net-zero target.
- » Moody's inclusion in [CDP A List on Climate](#) and CDP Supplier Engagement Leader for the second consecutive year, and recognition in CDP's Story of Change report.

# Governance

## BOARD'S OVERSIGHT OF CLIMATE-RELATED RISKS AND OPPORTUNITIES

### The Board of Directors

Moody's Board of Directors is responsible for the oversight of the company's management and strategy of ESG-related risks and opportunities. The Chief Executive Officer (CEO), who also serves on the Board, is responsible for overseeing management's assessment and mitigation of material risks. The Board is responsible for setting, maintaining and regularly reviewing policies and processes to manage the company's exposure to risk, including climate-related risk. For example, [Moody's Environmental Sustainability Policy](#), which reflects its efforts to minimize the impact of the company's operations and services on the environment, was updated in 2021 and reviewed by the Board.

The Board is also assisted by three committees that inform Moody's approach to ESG issues: the Governance & Nominating Committee, the Audit Committee, and the Compensation & Human Resources Committee. The Board's ongoing oversight extends throughout the year, as management continually adjusts its approach in response to emerging climate and ESG-related risks and opportunities. In addition, the Board reviews the company's long-term strategic plan at least annually, which includes a focus on various ESG initiatives. The Board oversees Moody's policies

for assessing and managing the company's exposure to risk, including climate-related risks such as business continuity disruption, as well as reputational or credibility concerns stemming from the incorporation of climate-related risks into Moody's Investors Service's (MIS) credit methodologies and credit ratings.

Moody's Board is comprised of individuals with wide-ranging experience in ESG and risk management topics. The Chairman of the Audit Committee, who also serves as a member of Moody's Governance & Nominating and Compensation & Human Resources Committees, is certified in ESG oversight. The Board continues to enhance its collective knowledge of sustainability topics through ongoing education. The Board and its committees receive regular presentations from management on various environmental and social issues, such as climate and the integration of ESG factors into Moody's products and solutions. The Board also received training from a third party in 2021 regarding oversight considerations with respect to ESG trends and developments.

### The Governance & Nominating Committee

The Governance & Nominating Committee is responsible for overseeing sustainability matters related to the business and for long-term value creation, and makes recommendations to the Board regarding these issues.

### The Audit Committee

With respect to risk disclosures, the Audit Committee oversees disclosure of financial, accounting and risk in Moody's annual and quarterly reports, including those related to sustainability.

Additionally, it supports the Board in its duties related to the oversight of risk assessment and management processes. The Audit Committee reviews Moody's risk factors as included in the Form 10-K, including the financial risk of a business continuity disruption due to climate-related incidents, and exposure to reputational and credibility concerns attributed to climate-related matters.

### Compensation & Human Resources Committee

The Compensation & Human Resources Committee reviews sustainability-related performance goals for determining compensation of certain senior executives.

## MANAGEMENT'S ROLE IN ASSESSING AND MANAGING CLIMATE-RELATED RISKS AND OPPORTUNITIES

The Executive Leadership Team (ELT), comprised of the CEO and his direct reports, serves as the decision-making body for key strategic sustainability efforts, with oversight from the three committees of the Board of Directors. The ELT consistently develops strategic plans that respond to both climate risks and market-driven opportunities through new and enhanced product and services offerings, as well as through acquired capabilities.

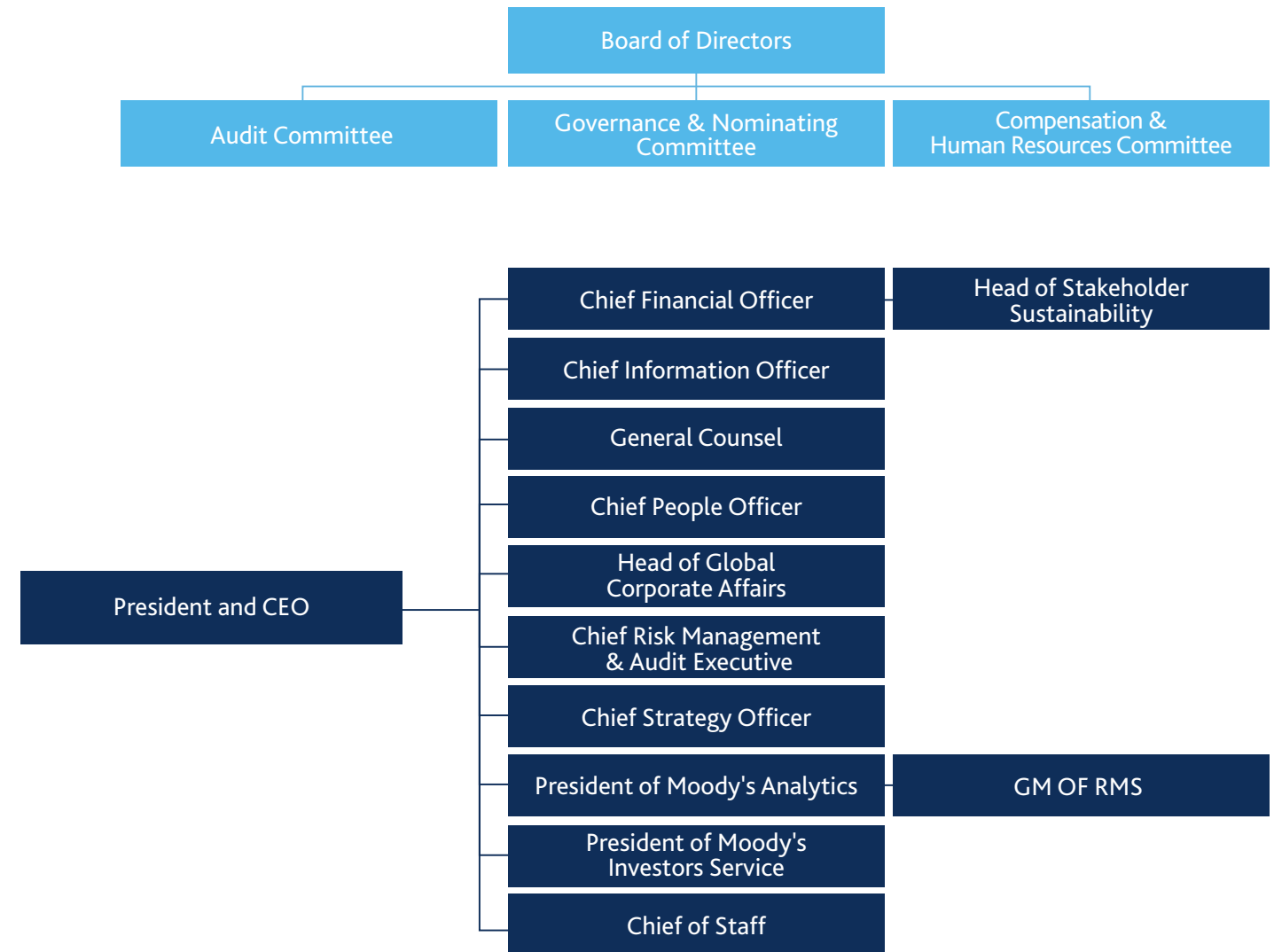
In addition to overseeing the Finance function, the Chief Financial Officer (CFO) oversees Moody's Stakeholder Sustainability team and reports directly to the CEO. The Stakeholder Sustainability team evaluates Moody's progress on sustainability issues and generates recommendations to enhance the company's approach to sustainability. The head of Stakeholder Sustainability oversees the design and implementation of Moody's corporate sustainability strategy, including climate-related risks, and reports to the CFO.

The President of Moody's Analytics (MA) oversees Moody's Climate offerings which now includes RMS, and identifies opportunities in Moody's business that align with its sustainability mission. The General Manager (GM) of RMS identifies and generates recommendations on climate-related strategic opportunities in Moody's products and services and reports to the President of MA.

## Embedding climate and sustainability metrics into executive compensation

To secure the achievement of Moody's climate and sustainability-related goals, ELT members are held accountable with clearly defined metrics linked to their compensation. In particular, the CFO's compensation is tied to the advancement of the company's sustainability programs, including progress on Moody's [Decarbonization Plan](#) and best-in-class sustainability-related disclosures and reporting. In 2021, these efforts were expanded with sustainability-related performance metrics becoming more fully integrated into the Strategic & Operational metrics used to determine annual cash incentive payments for all senior executives. These metrics are aligned to Moody's pre-existing sustainability targets, including emissions reductions targets.

Figure 1: Climate governance organizational chart



# Strategy

## CLIMATE-RELATED RISKS, OPPORTUNITIES AND TIME HORIZONS

This report details climate-related risks and opportunities relevant to Moody's across three time frames: short-term (up to 2025), medium-term (up to 2030) and long-term (up to 2040). The long-term horizon is aligned with Moody's commitment to achieve net-zero by 2040. Risks and opportunities are evaluated against the company's financial materiality threshold, defined as a risk or opportunity that poses a change of over 10% of Moody's earnings before interest and tax (EBIT), or if there is a significant financial impact on sustainability.

The scenario analysis results demonstrate that the climate-related risks Moody's faces do not present substantive financial or strategic impact. However, several climate-related opportunities remain significant for Moody's in terms of markets, products and services, as well as resilience, as outlined in **Table 1**.

**Table 1:**  
Climate-related opportunities

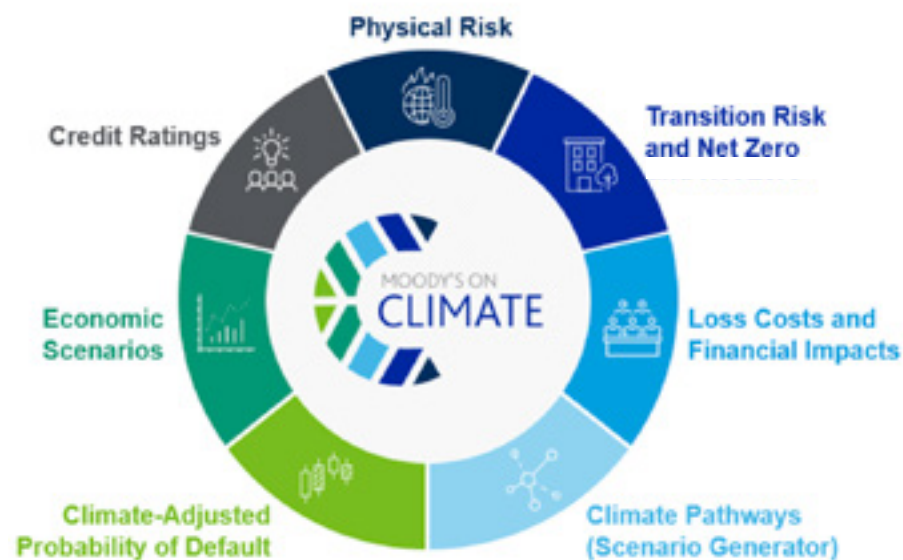
● Low impact ● Medium impact ● High impact

Category	Opportunity	Financial driver	Time horizon	Magnitude of impact	Strategy to Harness Opportunity
Markets	Access to new markets	Increased revenue through access to new and emerging markets	Short-term	●	Moody's is presented with the ongoing opportunity to further integrate climate and ESG into the company's products and services, and to expand its Climate Solutions suite. Moody's continues to enhance its capabilities at the forefront of climate innovation through strategic ESG and Climate investments. For example, the acquisition of RMS, a leading global provider of climate and natural disaster risk modeling and analytics, further demonstrates the strategic importance of ESG to Moody's business. The acquisition significantly expands the climate-related support offered to Moody's existing customers as well as the company's in-house capabilities for understanding its own climate risks. The acquisition builds on Moody's strategy to invest in companies focused on providing ESG data, research or services for market participants, which began in 2019 with its investments in Vigeo Eiris and Four Twenty Seven, Inc.
Products and services	Development of new products or services through R&D and innovation	Increased revenue resulting from heightened demand for products and services	Short-term	●	To realize the full potential of product- and services-related opportunities, Moody's developed a data infrastructure that allows streamlined access to ESG climate risk and sustainable finance data to Moody's entities, affiliates, and customers. The results of this data infrastructure allow: <ul style="list-style-type: none"> <li>i) Moody's employees to easily navigate a comprehensive climate database and high-quality dataset to facilitate the incorporation of climate considerations into its research publications;</li> <li>ii) Moody's customers to easily access the same high-quality data to incorporate climate considerations into their analyses and work processes.</li> </ul> Moody's climate-focused activities in these areas have contributed to increases in its 2021 ESG-related revenue as compared to 2020.
Resilience	Memberships and climate change commitments	Increased revenue through access to new and emerging markets	Short-term	●	Moody's maintains memberships in numerous climate-related initiatives, including the Coalition for Climate Resilient Investment, NZFSPA, TCFD, and TNFD. These memberships and several other industry working groups facilitate an opportunity for extensive outreach and engagement activities that allow Moody's to play a pivotal role in transforming capital markets to incorporate climate and broader ESG considerations to serve market needs.

As sustainable finance and ESG markets continue to grow, and investors, banks, insurers and other corporations are increasingly tasked with identifying, quantifying and managing their climate-related risks, the demand for climate and ESG data, metrics and analytics also rises. This momentum has significantly shaped the products and services Moody's brings to its customers, and as such, over the past three years, ESG has been a strategic growth driver for the company. In 2021, ESG-related revenue increased 36% year-over-year to \$29 million comprised of \$22 million in stand-alone ESG revenue and \$7 million from integrating ESG-related solutions into MIS's and MA's products. The acquisition of RMS added \$81 million<sup>1</sup> in revenue in 2021, from the acquisition date in September until year-end.

Moody's climate and ESG capabilities significantly expanded in 2021 — climate is now integrated across a wide array of Moody's products.

**Figure 2:**  
Climate is integrated into Moody's core offering



Source: Moody's Climate Solutions, <https://esg.moody's.io/climate-solutions>

<sup>1</sup> \$81 million in revenue is net of an \$18 million deferred revenue adjustment.

<sup>2</sup> Issuer Profile Scores (IPS) assess an entity's exposure to ESG-related risks from a credit perspective.

<sup>3</sup> Credit Impact Scores (CIS) indicate the extent to which ESG factors impact the credit rating of an issuer or transaction.

## KEY CLIMATE-RELATED PRODUCT AND SERVICE EXPANSIONS IN 2021

- » Moody's launched **Climate Solutions**, a comprehensive product suite dedicated to the identification, quantification and monitoring of climate risks. In 2021, the company expanded its data coverage of the physical risks posed by climate change with new sub-sovereign climate risk scores that quantify population-weighted exposure to flood, windstorm, wildfire, heat stress, water stress and sea-level rise. The scores complement Moody's expanding coverage of forward-looking physical risk data for locations globally, including scores for 200 sovereigns. In December, Moody's launched **Temperature Alignment**, a net-zero solution which assesses how companies' emissions targets align with global temperature benchmarks, and their progress towards meeting those targets.
- » Climate was further integrated into Moody's Analytics flagship solutions:
  - **EDF™ (Expected Default Frequency) model** to provide climate-adjusted Probability of Default for public and private companies (CreditEdge platform and RiskCalc);
  - **REIS platform** for commercial real estate in the U.S.;
  - **Economic scenarios** such as, Scenario Studio, which enabled development of custom financial scenarios;
  - **Climate Pathways Scenario Service** is built on Moody's scenario generation software to help insurers with their assets and liability projections and stress testing;
  - **Mortgage Portfolio Analyzer** (a loan-level software platform for analyzing the credit risk of whole-loan residential mortgage portfolios and collateral pools underlying residential mortgage-backed security (RMBS) transactions); and
  - **CMM (Commercial Mortgage Metrics) analytics tool** for commercial real estate mortgage risk to assess default and recovery for Commercial Real Estate (CRE) mortgages.
- » Following the acquisition of **RMS**, Moody's offers climate and natural disaster risk modeling, which serves the Property and Casualty (P&C) and reinsurance industries.
- » In January 2021, MIS launched **ESG Issuer Profile Scores<sup>2</sup> (IPS)** and **Credit Impact Scores<sup>3</sup> (CIS)** to provide greater transparency around how ESG considerations are integrated into credit ratings. While initially focused on sovereign issuers, coverage expanded throughout the year to include more than 1,700 governments, financial institutions, and corporations across a wide range of sectors. By the end of 2022, Moody's intends to publish ESG scores for thousands of additional rated issuers.
- » In addition to ESG scores, MIS also offers **Carbon Transition Assessments (CTAs)**, which provide a consistent and verifiable means to analyze carbon transition risk for rated non-financial companies. For each of the sectors rated globally, Moody's also publishes Environmental and Social Risk Heat Maps that visualize the relative ranking of various sectors along the environmental and social risk classifications.



## IMPACT ON BUSINESS, STRATEGY AND FINANCIAL PLANNING

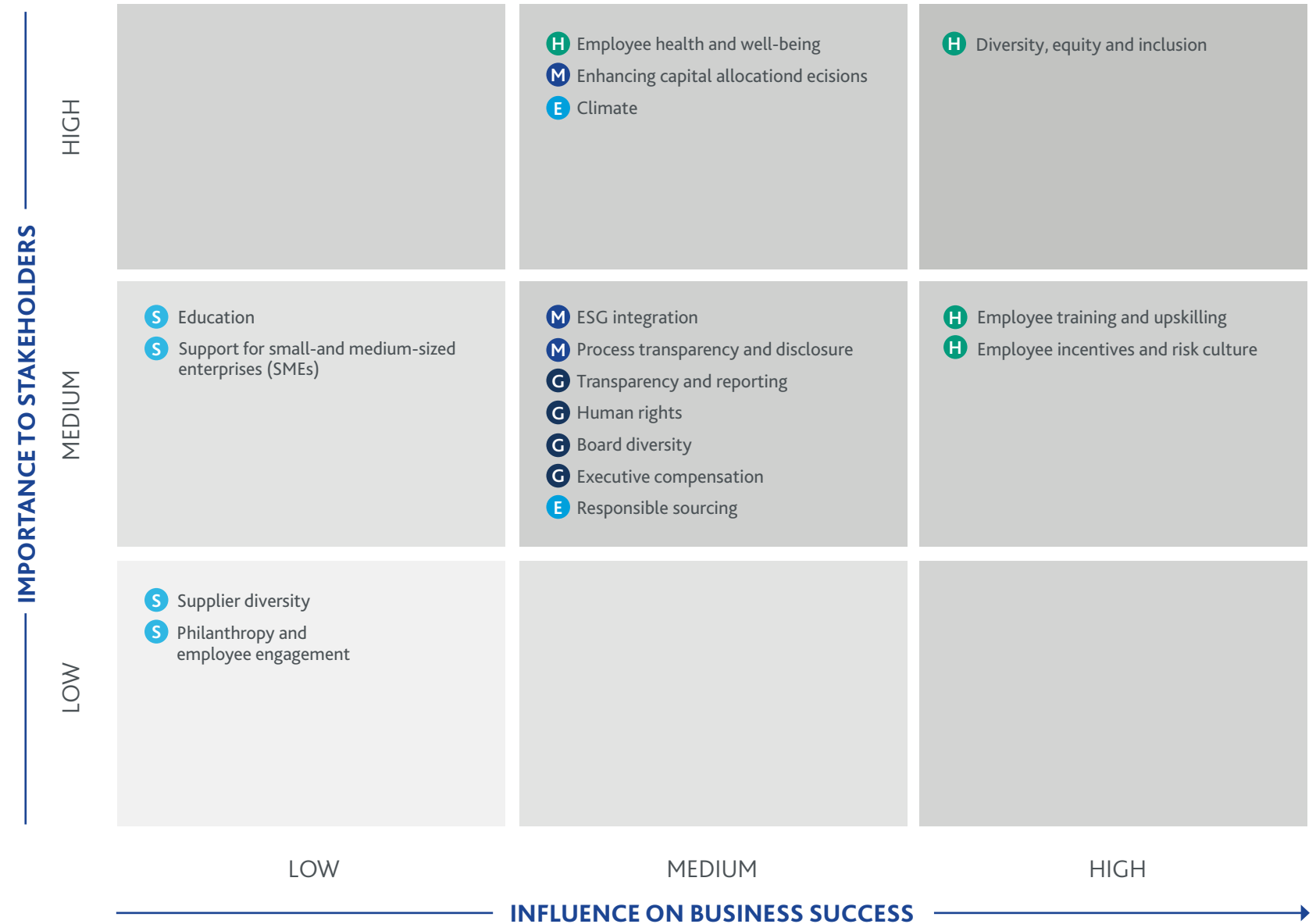
### Non-financial materiality assessment and climate

Moody's uses a non-financial materiality assessment to identify the sustainability topics that are most relevant to internal and external stakeholders, as well as those most influential to the company's business. The assessment informs Moody's sustainability strategy and reporting. As of Q3 2020, it placed climate as a topic of high-importance to Moody's stakeholders, indicating a medium level of influence on its business success. For further information on Moody's materiality assessment, please refer to its [Stakeholder Sustainability microsite](#).

#### MATERIALITY TOPICS (AS OF Q3 2020)

- M Moody's role in the market
- E Environment
- H Human capital
- S Social capital
- G Governance

Figure 3: Moody's materiality assessment



## Physical climate risk

Although physical climate risks can potentially impact Moody's now and in the future, no events to date have resulted in financial impacts exceeding Moody's materiality threshold. Data from physical climate events are tracked, providing the company with further insights into the possible financial impacts of physical climate risks to its business. Where appropriate, the data is used internally to refine relevant risk management plans and procedures that enhance Moody's resilience. This information helps the company develop effective mitigation responses.

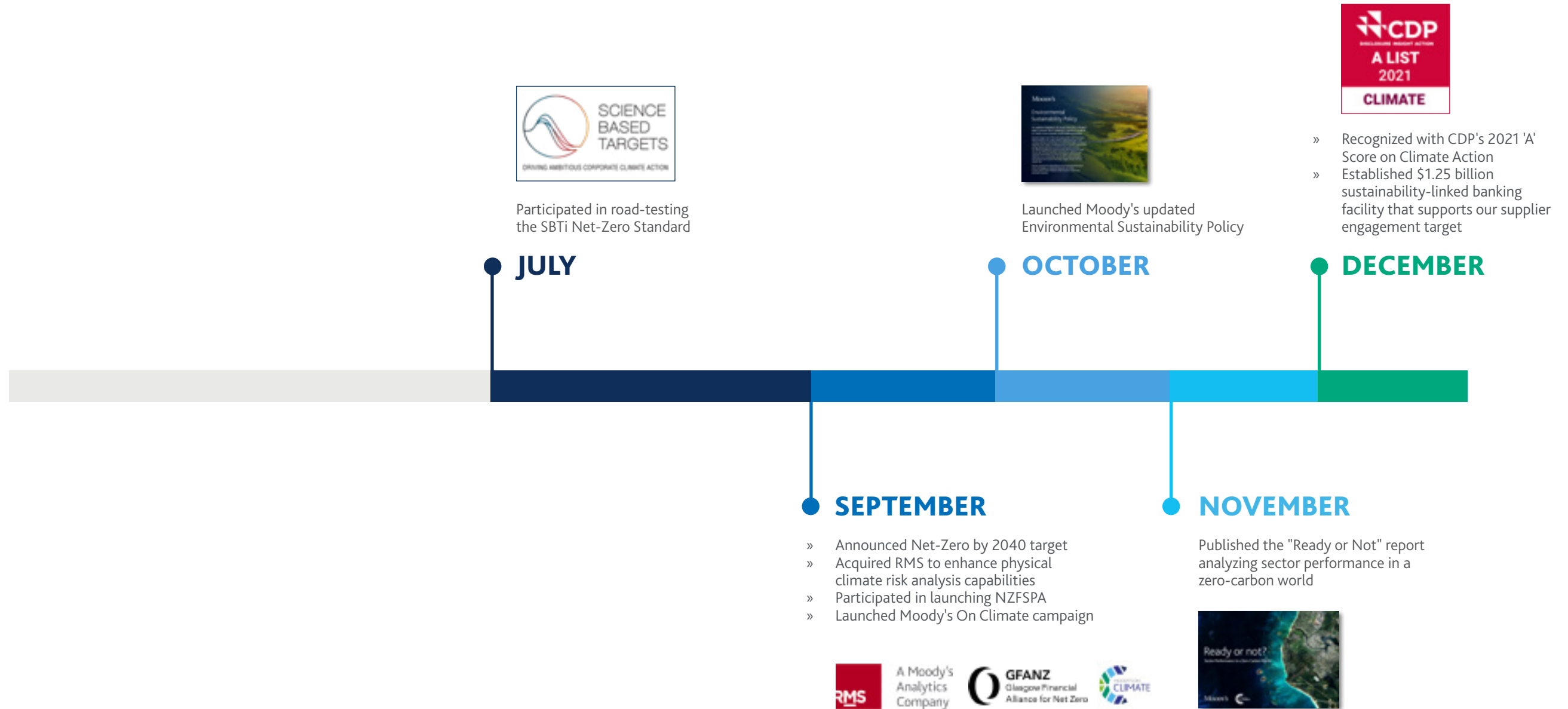
## Transition risk

Transition risks also have the potential to impact Moody's now and in the future, but to date, no transition risks have resulted in financial impacts exceeding Moody's materiality threshold. The company's knowledge and awareness of transition risks have shaped its climate ambitions and drove the development of its own Decarbonization Plan, which positions Moody's well for risk mitigation. Although Moody's recognizes the financial costs associated with mitigating transition risk (for example, the ongoing costs of procuring 100% renewable electricity for the company's global operations), the findings from its 2021 scenario analysis show that the mitigation benefits of Moody's strategy outweigh the costs. In addition, the company's ongoing efforts to integrate climate considerations across its products and services position Moody's well to continue to benefit from the transition opportunities presented.

**Table 2:  
Moody's business, strategy and financial planning have been proactively influenced by climate-related themes**

Climate Theme	Our action
<b>Targets</b>	<ul style="list-style-type: none"> <li>» In September, Moody's announced its commitment to achieve net-zero emissions across its operations and value chain by 2040, bringing Moody's original target forward by ten years.</li> <li>» In December, Moody's established its first sustainability-linked banking facility. The \$1.25 billion senior unsecured revolving credit facility includes a sustainability-linked pricing adjustment to the company's goal of 60% of its suppliers by spend covering purchased goods, services and capital goods to have science-based targets by 2025.</li> <li>» In April 2022, Moody's was one of the first companies to have its long-term net-zero target validated by the Science Based Targets initiative.</li> </ul>
<b>Disclosures</b>	<ul style="list-style-type: none"> <li>» Moody's sustained its CDP Climate Change A score and CDP Supplier Engagement Leader recognition for the second consecutive year, exemplifying its ongoing commitment to comprehensive disclosure and climate action.</li> <li>» Moody's achievements in climate strategy and disclosure were publicly recognized in CDP's 2021 "Stories of Change".</li> </ul>
<b>Acquisitions</b>	<ul style="list-style-type: none"> <li>» In September, Moody's acquired RMS, a leader in climate and natural disaster risk modeling and analytics– a \$2 billion acquisition further accelerating the company's global integrated risk assessment strategy, and enhancing its capabilities in fast-evolving climate risks.</li> <li>» Moody's acquisitions and investments are informed by the company's strategy to expand its ESG and Climate-related capabilities; Moody's has made several acquisitions since 2019, including Vigeo Eiris and Four Twenty Seven, Inc.</li> </ul>
<b>Stakeholder engagement</b>	<ul style="list-style-type: none"> <li>» In September, Moody's announced its participation as a founding member of NZFSPA. Through this alliance, Moody's commits to align all relevant products and services to net-zero emissions, in addition to emissions reductions in its operations. This commitment facilitates improved decision-making for Moody's customers and intends to accelerate the flow of capital to support the transition to net-zero.</li> <li>» Moody's was the first S&amp;P 500 company to submit its Decarbonization Plan to stockholders for an advisory vote. Moody's support for the campaign was announced in 2020, and in 2021. It received 93% of stockholder votes in favor.</li> </ul>
<b>Thought leadership</b>	<ul style="list-style-type: none"> <li>» In November, Moody's published "Ready or not?" – a report integrating market-leading data from across the company to analyze the climate-driven transformation of the world's most carbon-intensive sectors.</li> <li>» In 2021, the company launched "Moody's on Climate," a hub to share insightful articles and publications combining the company's climate-related research, product offerings, and its climate action. The campaign was timed to align with COP26, aiming to drive conversation on climate-related issues, and received strong engagement from both the private and public sectors.</li> </ul>

**Figure 4:**  
2021 Climate key events



## RESILIENCE OF STRATEGY (SCENARIO ANALYSIS)

Moody's 2021 climate scenario analysis includes several enhancements to enable new and valuable insights on climate-related risks and their possible impacts on Moody's. Exploring the possible implications of different physical and transition scenarios helps stress test Moody's existing strategy, enabling the company to build climate resilience independent of the scenario it may face. Using a number of signposts and indicators, Moody's continues to monitor global trends to determine which physical and transition drivers are most likely to materialize in the future.

For the first time, this report provides a combined approach to climate scenario analysis by evaluating Moody's climate-adjusted probability of default. This analysis was delivered using Moody's Expected Default Frequency (EDF™) model, which considers both physical and transition risks.

The physical analysis in this report applies a range of Intergovernmental Panel on Climate Change (IPCC) Representative Concentration Pathways (RCP) scenarios to explore physical risks to Moody's offices, data centers and employees working remotely.

Considering Moody's is operating in a hybrid work model, exploring and understanding the exposure to climate-risks as a result of working from home could allow the company to better plan in the event of a disruption.

Moody's transition analysis explores its application of a range of the latest Network for Greening the Financial System (NGFS) scenarios, including net-zero aligned futures, to explore the possible costs of mandatory carbon pricing and renewable electricity pricing, as well as the overall impacts to the company. Moody's modeling results now account for the scenario-dependent costs of continuing

to procure 100% renewable electricity for the company's global operations.

Multiple climate scenarios were selected and applied to allow an enhanced understanding and stress test against possible future states of the world. The results allow Moody's to understand and explore exposure and impacts across a variety of physical and transition risk scenarios. A summary of the climate scenarios applied by Moody's are depicted in **Tables 3 and 4**. Risks and opportunities were evaluated across short- (2025), medium- (2030) and long-term (2040) time horizons.

**Table 3: Physical scenarios evaluated**

Application	Physical analysis			
Source	Intergovernmental Panel on Climate Change (IPCC)			
Scenario name	Representative Concentration Pathway 8.5 (RCP 8.5)	Representative Concentration Pathway 6.0 (RCP 6.0)	Representative Concentration Pathway 4.5 (RCP 4.5)	Representative Concentration Pathway 2.6 (RCP 2.6)
Description	A very high GHG emissions scenario with emissions continuing to rise to the end of century.	An intermediate GHG emissions scenario with little additional effort to constrain emissions.	An intermediate emissions scenario with moderate additional effort to constrain emissions.	A stringent mitigation scenario.
End of century Global Mean Surface Temperature Change relative to 1850–1900 (°C)	3.7°C	2.2°C	1.8°C	1.0°C

Source: IPCC, [https://ar5-syr.ipcc.ch/topic\\_futurechanges.php](https://ar5-syr.ipcc.ch/topic_futurechanges.php)

**Table 4: Transition scenarios evaluated**

Application	Transition analysis			
Source	Network for Greening the Financial System (NGFS)			
Scenario name	Net Zero 2050	Divergent Net Zero	Delayed Transition	Nationally Determine Contributions (NDCs)
Description	Net Zero 2050 is an ambitious scenario that limits global warming to 1.5°C through stringent climate policies and innovation, reaching net-zero CO <sub>2</sub> emissions around 2050. Some jurisdictions such as the U.S., EU and Japan reach net-zero for all greenhouse gases by this point.	Divergent Net Zero reaches net-zero by 2050 but with higher costs due to divergent policies introduced across sectors and a quicker phase out of fossil fuels. This scenario differentiates itself from the Net Zero 2050 by assuming that climate policies are more stringent in the transportation and buildings sectors.	Delayed Transition assumes global annual emissions do not decrease until 2030. Strong policies are then needed to limit warming to below 2°C. Negative emissions are limited.	Nationally Determined Contributions (NDCs) include all pledged policies even if not yet implemented. This scenario assumes that the moderate and heterogeneous climate ambition reflected in the NDCs at the beginning of 2021 continues over the 21st century (low transition risks).
Outcome	50% chance of limiting global warming to below 1.5°C by the end of the century, with no or low overshoot (< 0.1°C) of 1.5°C in earlier years.	50% chance of limiting global warming to below 1.5°C by the end of the century, with no or low overshoot (<0.1°C) of 1.5°C in earlier years.	67% chance of limiting global warming to below 2°C by the end of the century.	Emissions decline but lead nonetheless to about 2.5°C of warming associated with moderate to severe physical risks. Transition risks are relatively low.

Source: NGFS, [https://www.ngfs.net/sites/default/files/media/2021/08/27/ngfs\\_climate\\_scenarios\\_phase2\\_june2021.pdf](https://www.ngfs.net/sites/default/files/media/2021/08/27/ngfs_climate_scenarios_phase2_june2021.pdf)

## Climate-adjusted probability of default

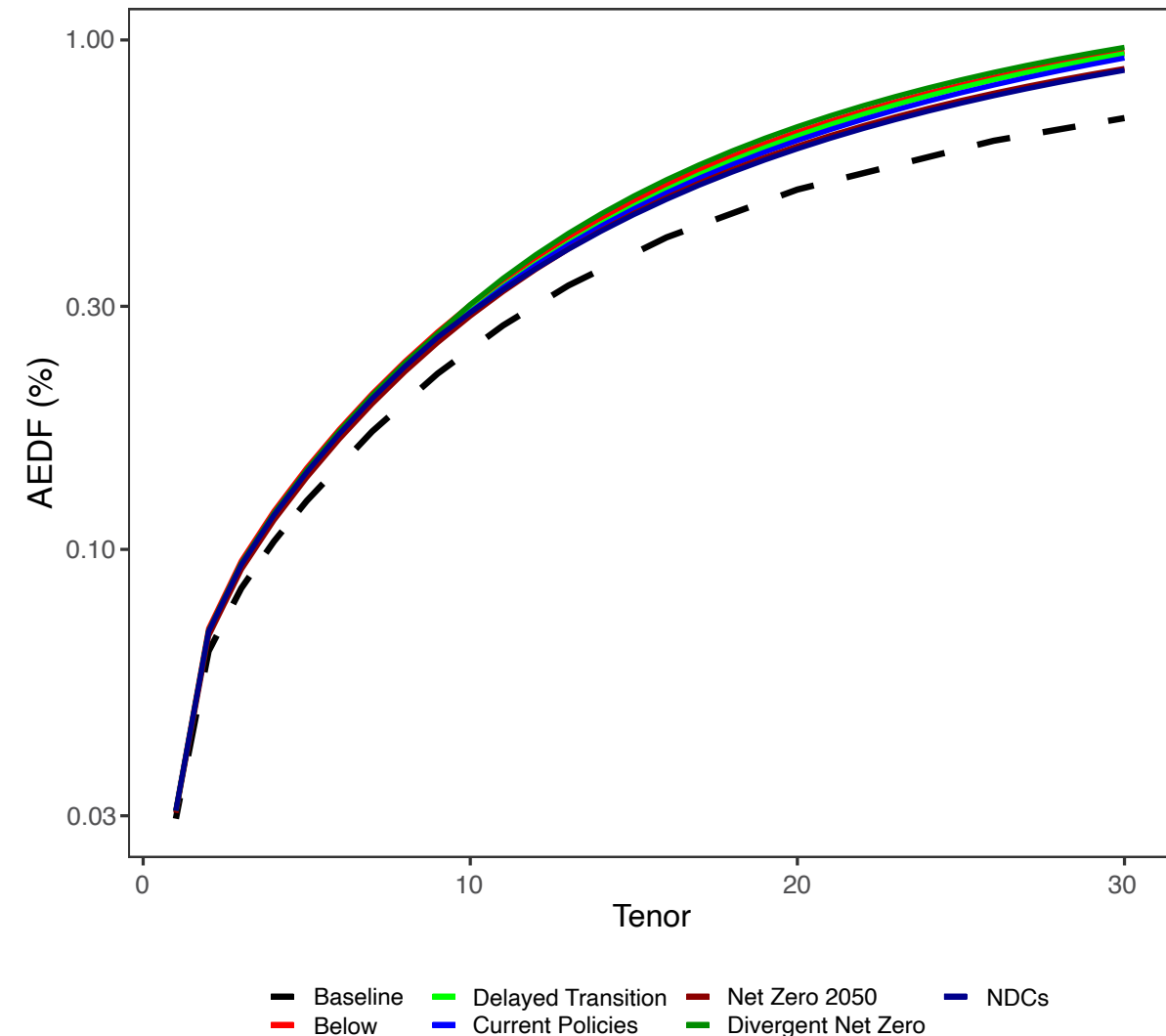
The climate adjusted probability of default (PD) is built on the CreditEdge Public Firm EDF™ model. The Expected Default Frequency (EDF) metric is the focal point of this framework, which measures the probability that a firm will default over a given year. "Default" is defined as either the failure to make scheduled principal or interest payments, a bankruptcy filing, or both. In CreditEdge, default is modeled as the point in time when the market value of the firm's assets fall below the book value of its liabilities.

The climate-adjusted probability of default considers the physical and transition risks of climate change and their expected impacts under different climate scenarios. Physical risks have a financial impact on a company through the increased frequency and severity of acute climate events, and transition risks have a financial impact on a company through increased taxes on carbon emissions that may be passed on across the supply chain. NGFS climate scenarios were applied to model Moody's PD term structure.

Moody's climate-adjusted Annual Expected Default Frequency (AEDF) is shown in Figure 5 by tenor, broken down by climate scenario – each scenario showing physical and transition risks combined. The term tenor describes the length of time remaining in the life of a financial contract, and the 30-year tenor period coincides with Moody's own risk considerations in the long-term horizon, as defined in the Strategy section.

For all climate scenarios applied, although climate risks are observed to increase Moody's AEDF relative to the baseline PD term structure, the company's credit risk remains very low across all tenor periods. Modeling results show that scenarios only begin to noticeably diverge beyond the 10-year tenor – over the 30-year tenor Moody's performs best under the NGFS Net Zero by 2050 scenario, and worst under the Divergent Net Zero scenario due to the delayed and subsequently accelerated and disruptive action expected to meet the same goal. Moody's climate strategy and targeted emissions reductions provide resiliency to transition risk exposure under all scenarios.

**Figure 5:**  
**Combined risk: PD term structure by scenario**  
**MOODY'S CORP.**



Source: Moody's Analytics CreditEdge, <https://www.moodyanalytics.com/product-list/creditedge>

## PHYSICAL RISK ANALYSIS

In 2021, Moody's updated and expanded its physical climate risk analysis. In addition to evaluating the climate risk profile of its offices and data centers, Moody's analysis explored the possible impacts of physical climate perils on its global remote working capacity. The company also used new internal capabilities to quantify the potential business disruptions of physical climate risks.

### Global offices and data centers analysis

Physical climate impact across the company's leased offices — over 130 locations — and data centers, as of December 31, 2021, was assessed.

Given the nature of Moody's office portfolio as multi-tenant building leases, downtime and associated disruption were analyzed. Acute risks, arising from sudden and severe climate events, and chronic risks, arising from long-term shifts in climate, were evaluated for each of the company's assets. Moody's Climate Solutions suite includes the ability to model all four of the IPCC RCP Scenarios — 2.6, 4.5, 6.0 and 8.5 — for acute physical risks. To enable the integration of mitigation strategies into financial planning, the high-emissions scenario, RCP 8.5, was used at a 20-year horizon as a key scenario, including present day and future-looking time horizons. Over 80% of Moody's offices, and 100% of data centers are in countries where Moody's has detailed catastrophe models. The physical risk results that follow on these locations represent this coverage, unless otherwise specified. A more in-depth case study into Moody's Headquarters at 7 World Trade Center in New York City was conducted, modelling all four RCP scenarios across the century to analyze downtime.

Furthermore, this report incorporates the possible impacts of physical climate perils on Moody's global remote working capacity at present day and forward-looking.

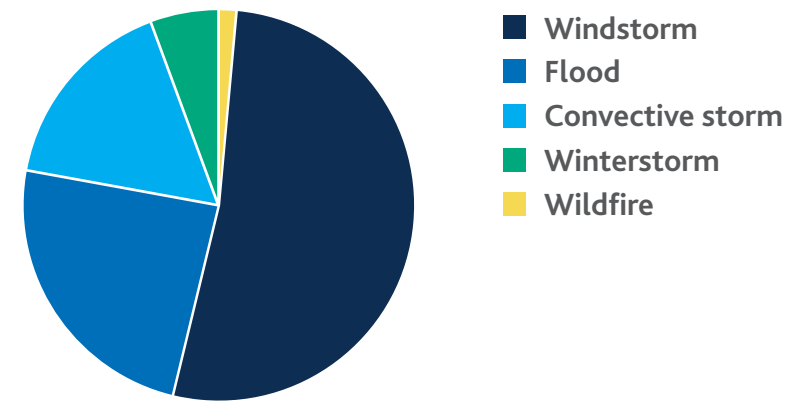
### Present day physical climate risk

Moody's ran an acute physical risk analysis across offices and data centers to assess current, present day risk as a baseline. The analysis shows there is an 80% probability that at least one of Moody's offices will be directly impacted<sup>1</sup> by a climate-related catastrophe for at least a day in a given year. Moody's offices can expect an average of almost 437 people-days of downtime each year.<sup>2</sup> There is a 1% probability that the average annual disruption increases to over 6,500 people-days. The combined impacts of windstorm with storm surge account for over 50% of the risk of climate perils to Moody's offices today. However, earthquakes have the potential to cause significantly greater disruption to the company than any climate-related risk. Geographically, climate risk for Moody's is concentrated in the United States, and responsible for over 50% of the average annual disruption.

As shown in **Figure 7**, a few Moody's offices drive potential expected downtime today, with the top five locations driving 50% of expected downtime. Moody's Headquarters at 7 World Trade Center show the highest people-days of disruption, dominated by windstorm and associated storm surge risk. Moody's has conducted a detailed climate change assessment of 7 World Trade Center (see **Figure 8**) to see how this risk is likely to change.

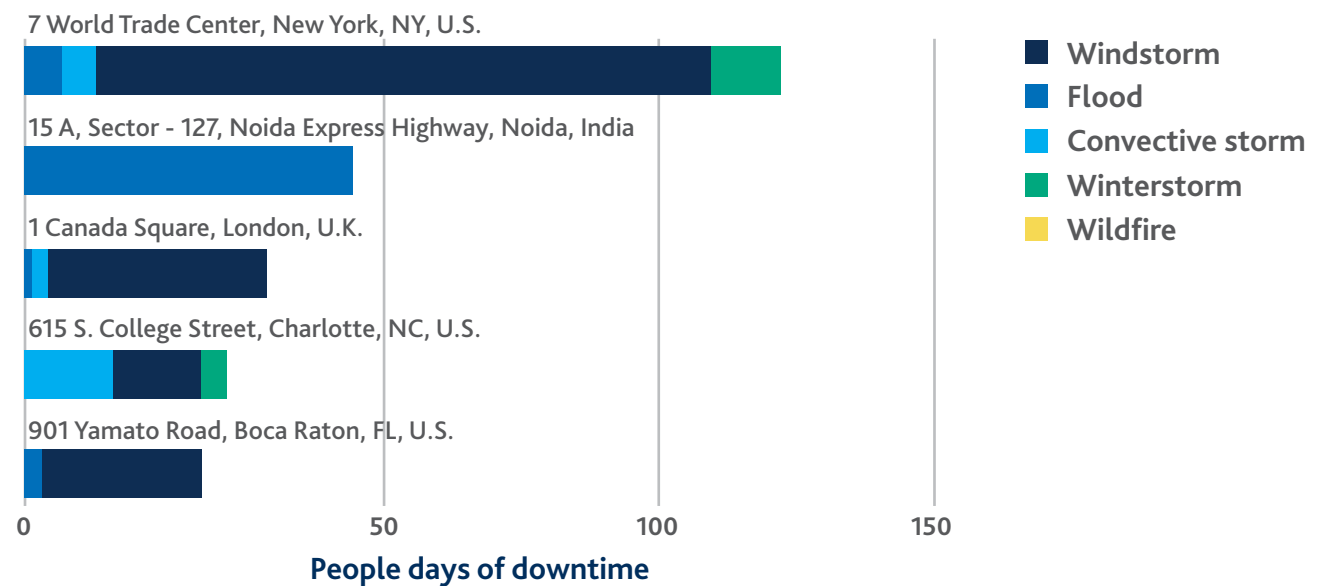
When running the same analysis for Moody's data centers, it was found that there is a 23% probability that at least one data center location will be directly impacted by a climate-related natural catastrophe for at least a day in a given year. A small number of data center locations drive the majority of the risk, with flood as the driving peril. Moody's regularly assesses physical risks to these locations in order to put in place appropriate mitigation measures. Further information on Moody's resiliency and business continuity plans can be found in the [Risk Management section](#).

**Figure 6: Present day physical climate risk sources to Moody's offices, by people-days**



Source: RMS Climate Change Models, <https://rms.com/models/climate-change>

**Figure 7: Top five Moody's offices driving present day downtime due to physical risk exposure, by people-days**



Source: RMS Climate Change Models, <https://rms.com/models/climate-change>

<sup>1</sup> The probability of impact measures the probability that at least one location will experience greater than one day of damage-induced downtime for the modeled peril.  
<sup>2</sup> Catastrophe models simulate thousands of possible event scenarios for a given peril and region, using a combination of statistical data, science and engineering. Average annual disruption is the mean disruption across thousands of plausible simulated years and disruption can be expected to significantly fluctuate from the average in any given year. For events that happen with low frequency, a single location may experience many years with no disruption but a small number of years with severe disruption.

## Forward-looking physical climate risk

To understand the impact of climate change to Moody's portfolio, a forward-looking climate risk assessment of all its offices and data centers was conducted using a climate change scenario of RCP 8.5 at 2040. This analysis considers both acute and chronic physical risks. Screening coverage of 100% of the locations was available.

The initial screening was performed using deterministic global climate models, which are downscaled to approximate climate peril changes at a local level. Where climate-conditioned catastrophe models are available, the analysis further considers the change in direct disruption and downtime that might be experienced under the RCP 8.5 scenarios in 2040.

**Table 5:**  
Distribution of Moody's offices by risk score for each long-term acute climate peril by 2040

Risk score	Flood	Windstorm (hurricanes and typhoons)	Wildfires
Red flag	4%	7%	0%
High	12%	4%	25%
Medium	14%	22%	34%
Low	70%	67%	41%
<b>Total offices</b>	100%	100%	100%

Source: Moody's Climate Solutions, <https://esg.moody's.io/climate-solutions>

## Forward-looking acute physical risk

### 1 | ACUTE RISK SCREENING

A global physical risk screening of Moody's offices and data centers for Moody's long-term risk horizon (2030 to 2040) are shown in **Tables 5 and 6**. 16% of the company's offices and 29% of its data centers are classified by a risk score of "red flag" or "high" risk for flood, while approximately a quarter of both offices and data centers are in "red flag" or "high" risk areas of wildfire. Although Moody's properties may not be directly affected by wildfire risk, indirect effects on the workforce and infrastructure, such as health impacts from wildfire smoke, water quality issues, transportation disruption and power outages, could negatively affect Moody's operations and employees.

<b>Red flag</b>	Highly exposed to historical and/or projected risks, indicating high potential for negative impacts
<b>High</b>	Exposed today and exposure level is increasing
<b>Medium</b>	Exposed to some historical and/or projected risks
<b>Low</b>	Not exposed or not significantly exposed to historical or projected risks

**Table 6:**  
Distribution of Moody's data centers by risk score for each acute climate peril by 2040

Risk score	Flood	Windstorm (hurricanes and typhoons)	Wildfires
Red flag	12%	12%	0%
High	17%	0%	24%
Medium	12%	18%	41%
Low	59%	70%	35%
<b>Total data centers</b>	100%	100%	100%

Source: Moody's Climate Solutions, <https://esg.moody's.io/climate-solutions>

## 2 | ACUTE RISK BUSINESS IMPACTS

To enhance Moody's understanding of climate change impact on its own operations, a probabilistic climate change impact assessment of the company's offices and data centers in the United States, Central America, Canada, Europe and Japan was performed. These countries account for over 70% of Moody's offices where detailed climate catastrophe models are available<sup>1</sup>, and over 80% of its total data centers. The assessment was focused on the potential disruption from acute climate perils – U.S. flood, North Atlantic<sup>2</sup> windstorm (including storm surge impact, and for 2040 sea level rise impact), North America<sup>3</sup> wildfire, Europe flood, Europe windstorm and Japan windstorm (typhoon). These represent the main acute risks to Moody's office and data center locations.

Tables 7 and 8 show the assessment results. Detailed building characteristics and risk mitigation features were not considered for the purposes of this study, but could be incorporated in a future enhancement of this approach.

The detailed analysis shows that in 2040 under RCP 8.5, the driving risk to disruption at Moody's offices will continue to be North Atlantic windstorm (including storm surge and sea level rise impacts). Moody's regularly assesses data center exposure to climate catastrophes and has carefully reviewed safety measures to minimize potential risk to business interruption.

<sup>1</sup> Coverage accounts for approximately 80% of total Moody's offices.

<sup>2</sup> North Atlantic refers to the U.S., Canada and Central America.

<sup>3</sup> North America refers to the U.S. and Canada.

<sup>4</sup> Includes impact from sea level rise.

**Table 7: Moody's offices forward-looking change in disruption under RCP 8.5, by peril and region**

Peril	North America			Europe		Japan
	U.S. inland flood	North Atlantic windstorm (including storm surge)	North America wildfire	Flood	Windstorm	Windstorm (typhoon)
Average annual disruption present day [people-days]	14	156	4	30	38	4
Average annual disruption in 2040 [people-days]	16	197 <sup>4</sup>	5	44	39	5
% change in average annual disruption at 2040 for RCP 8.5	+12%	+27%	+12%	+48%	+2%	+31%

Source: RMS Climate Change Models, <https://rms.com/models/climate-change>

**Table 8: Moody's data centers - long-term projected change in disruption under RCP 8.5**

Peril	North America			Europe		Japan
	U.S. inland flood	North Atlantic windstorm (including storm surge)	North America wildfire	Flood	Windstorm	Windstorm (typhoon)
Average annual disruption present day [days]	0.60	0.13	0.09	0.00	0.15	0.12
Average annual disruption in 2040 [days]	0.64	0.16 <sup>4</sup>	0.09	0.00	0.15	0.16
% change in average annual disruption at 2040 for RCP 8.5	+6%	+18%	negligible	negligible	negligible	+32%

Source: RMS Climate Change Models, <https://rms.com/models/climate-change>



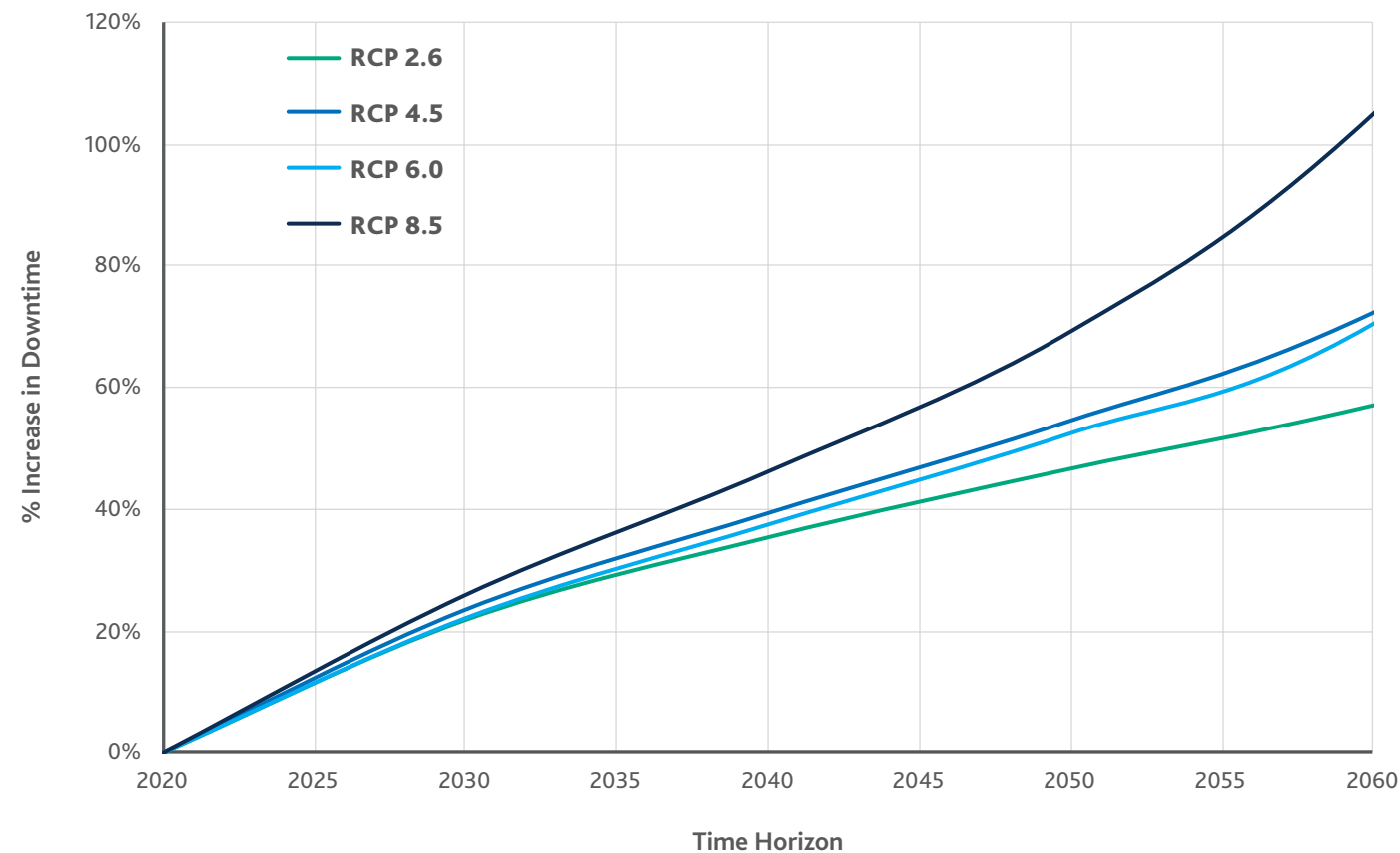
## ACUTE RISK CLIMATE CHANGE CASE STUDY: 7 WORLD TRADE CENTER

Moody's Headquarters at 7 World Trade Center in New York City, is the location with the highest level of potential disruption from acute climate-related catastrophes under both present day and forward-looking time horizons. Moody's analysis included conducting an in-depth consideration of how the risk at this site is likely to change over time. Increased risk from a change in hurricane frequency and size, combined with the impacts of sea level rise on associated storm surges during the century have been considered following the four RCP scenarios as defined by the IPCC's 5th report.

Today, there is less than a 1% probability that the Moody's Headquarters at 7 World Trade Center would be closed for at least a day due to direct damage. One day of closure would account for approximately 2,600 people-days. However, the average annual downtime experienced by Moody's Headquarters is expected to increase by almost 50% by 2040 under RCP 8.5. For this scenario, the 1 in 500 year downtime is expected to rise by almost 250%.

Until around 2060, risk from RCP 4.5 is seen to be greater than RCP 6.0, despite RCP 6.0 having a larger impact by the end of the century. This is driven by greenhouse gas concentration pathways for these scenarios in the first half of the 21st century, and is consistent with literature on the topic, including the IPCC 5th Assessment Report (AR5).

**Figure 8:**  
Increase in downtime at Moody's Headquarters as a result of increased risk from hurricanes and associated storm surge (%)



## Forward-looking chronic physical risk

A global assessment of Moody's offices and data centers was also conducted to assess the exposure to chronic climate-related risks – heat stress, water stress and sea level rise – under the RCP 8.5 at 2040 scenario. Coverage for 100% of Moody's offices and data centers was available for this screening. Most sites face no long-term risk from mean sea level rise, however 27% of office locations have a "high" risk score for water stress.

This overall physical risk exposure shows results consistent with Moody's previous TCFD Report. However, the company noted increased risk scores for wildfire, heat stress and water stress, which are largely related to its increased footprint in the Western parts of the U.S. following 2021 acquisition activity. This year's results derive significantly deeper insights into the potential impacts of climate change, specifically downtime and disruption, using Moody's newest climate conditioned catastrophe models. This will help Moody's further assess appropriate resilience measures for the management of the business.

**Table 9:**  
Distribution of Moody's offices by risk score for each chronic climate peril by 2040

Risk score	Heat stress	Sea level rise	Water stress
Red flag	1%	3%	0%
High	16%	0%	27%
Medium	44%	5%	57%
Low	39%	92%	16%
<b>Total offices</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: Moody's Climate Solutions, <https://esg.moody's.io/climate-solutions>

<b>Red flag</b>	Highly exposed to historical and/or projected risks, indicating high potential for negative impacts
<b>High</b>	Exposed today and exposure level is increasing
<b>Medium</b>	Exposed to some historical and/or projected risks
<b>Low</b>	Not exposed or not significantly exposed to historical or projected risks

**Table 10:**  
Distribution of Moody's data centers by risk score for each chronic climate peril by 2040

Risk score	Heat stress	Sea level rise	Water stress
Red flag	0%	0%	0%
High	12%	0%	6%
Medium	59%	18%	76%
Low	29%	82%	18%
<b>Total data centers</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: Moody's Climate Solutions, <https://esg.moody's.io/climate-solutions>

## Remote working analysis

Should any of Moody's global offices be impacted by physical climate events that cause localized disruptions, the company is able to reduce the potential business interruptions experienced through remote working. To explore Moody's ability to maintain remote working capacity should its offices be affected by unavoidable physical climate events, this year, the company's analyses incorporated the physical risk profiles of its employees working remotely. A detailed analysis was conducted for the home addresses of almost 90% of Moody's global workforce<sup>1</sup> for the same key perils as the offices – North Atlantic windstorm (including storm surge and sea level rise), U.S. flood, North America wildfire, Japan windstorm (typhoon), Europe windstorm and Europe flood. The results show expected disruption at present day and in 2040 using RCP 8.5.

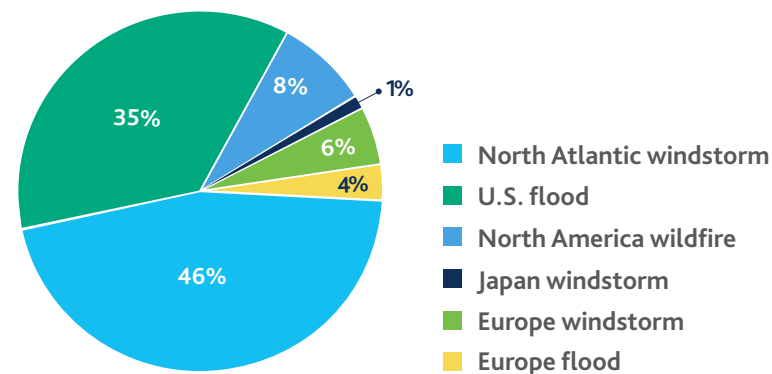
74% of the Moody's employees analyzed are currently in the U.S., Canada, Central America, Europe and Japan. For these employees' home addresses, we found that over 80% of disruption comes from windstorm (including storm surge) affecting the North Atlantic and flood events affecting the United States.

Table 11 shows the percentage increase in the expected disruption to employees as a result of these key perils. Moody's models show that disruption is anticipated to increase for all perils, particularly for flood in the United States and Europe.

To understand the overall impact of acute climate events on Moody's physical locations and remote working capacity, correlations across office facilities and remote working locations were explored. As an example, a detailed analysis of the employees in Moody's Headquarters at 7 World Trade Center was undertaken to show how business continuity, considering the hybrid working approach of both in-office and remote working, could be impacted by the effects of climate change by 2040 under RCP 8.5.

The analysis showed that if Moody's headquarters is impacted by an event causing at least 1 day of office closure, which is less than 1% likely at present day, it is expected that approximately 80% of employees working in that office would also experience some disruption in their homes. However, most would experience minimal impacts, with only 3% of employees affected for more than a week. Under RCP 8.5 at 2040, the expected number of homes associated to the headquarters office only and impacted by North Atlantic windstorm (including storm surge and sea level rise) is expected to increase by 17%.

**Figure 9:**  
Baseline disruption to employees



Source: RMS Climate Change Models, <https://rms.com/models/climate-change>

**Table 11:**  
Expected long-term increase in disruption to remote workers as a result of key climate perils under RCP 8.5

Employees	North America			Europe		Japan
	U.S. inland flood	North Atlantic windstorm (including storm surge)	North America wildfire	Flood	Windstorm	Windstorm
Average annual disruption (people days today)	221	288	54	23	35	8
Average annual disruption in 2040 [people days]	299	369 <sup>2</sup>	67	33	36	10
% change in average annual disruption at 2040 for RCP 8.5	+35%	+28%	+24%	+42%	+2%	+26%

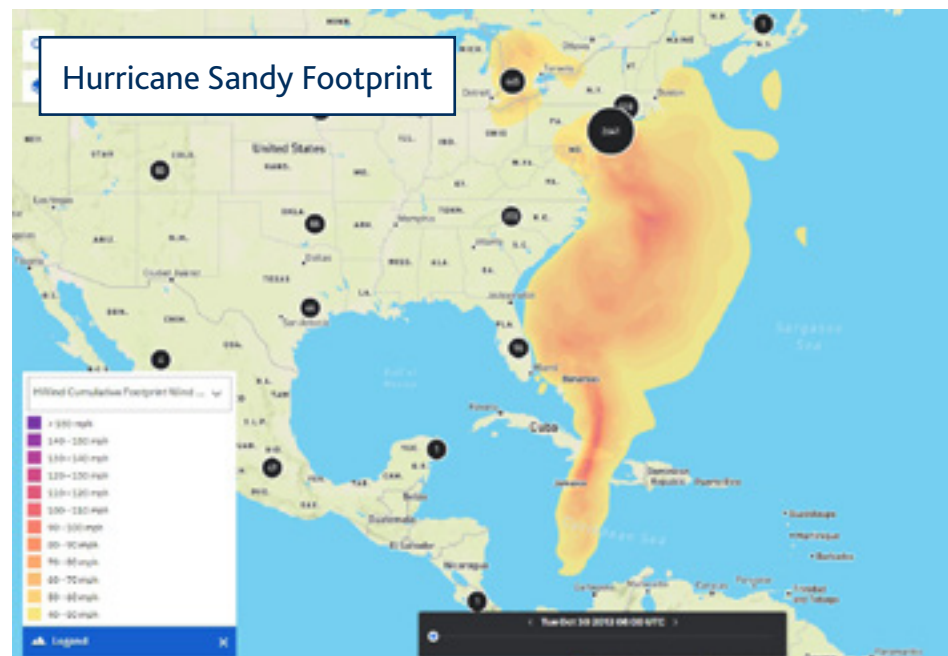
Source: RMS Climate Change Models, <https://rms.com/models/climate-change>

<sup>1</sup> As of December 31, 2021.

<sup>2</sup> Includes impact from sea level rise.

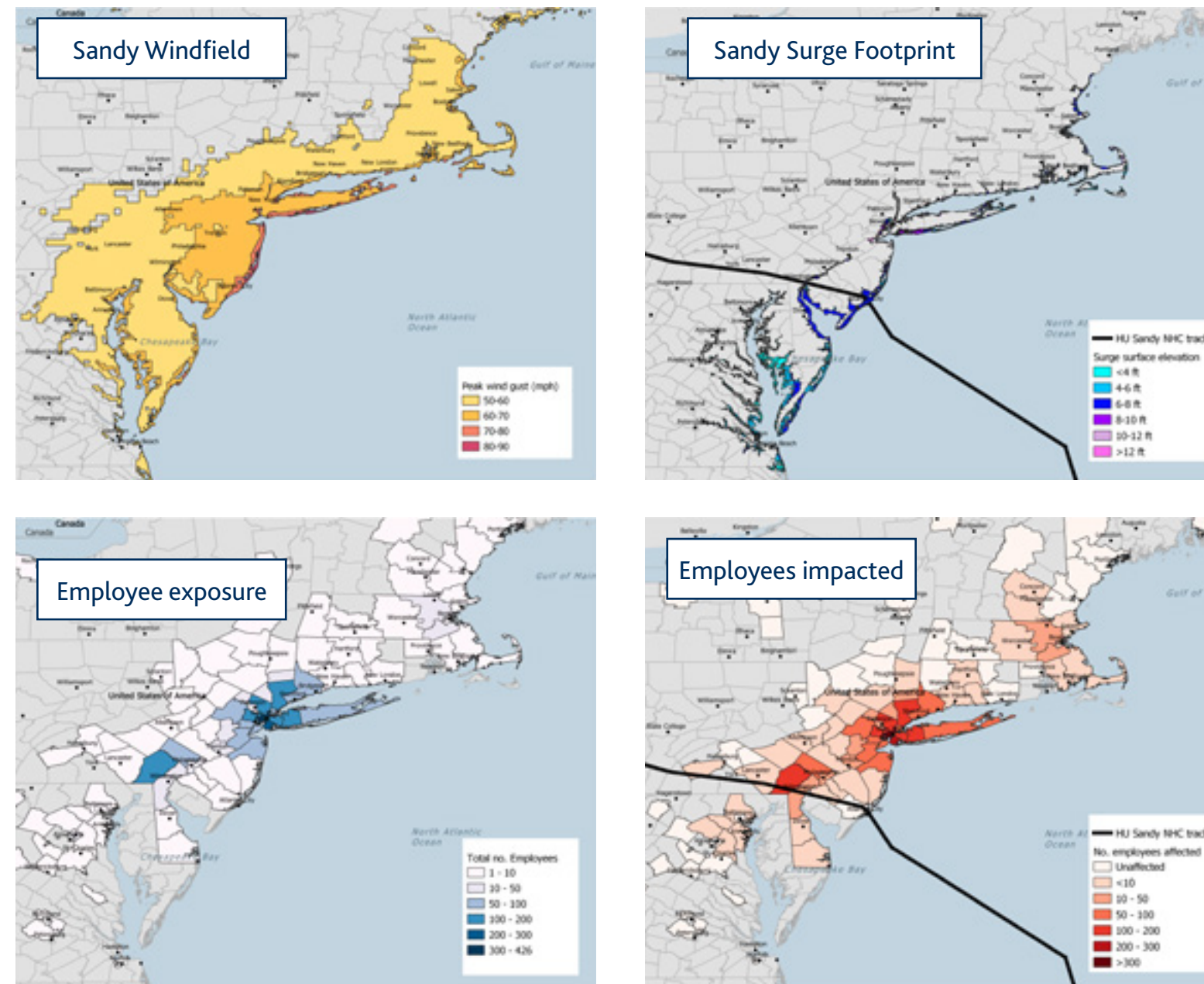
As an example of an event that impacted both the Moody's Headquarters and its employee base, Moody's studied Hurricane Sandy. The following graphics show the track of the storm, the detailed storm surge footprint and wind fields, and the number of employees impacted by county.

**Figure 10:**  
**Employees impacted by Hurricane Sandy**



Source: RMS ExposureIQ, <https://www.rms.com/risk-intelligence/exposureiq>

**Figure 11:**  
**Employees impacted by Hurricane Sandy**



Source: RMS ExposureIQ, <https://www.rms.com/risk-intelligence/exposureiq>

## TRANSITION RISK ANALYSIS

### Carbon price modeling

A key element of transition impact is the potential increase in GHG emissions pricing. A wider introduction of mandatory carbon pricing would increase costs for direct operations related to energy use and indirectly via the purchase of goods and services. Carbon pricing on power generation has the potential to increase total energy costs, directly for carbon-intensive sources and indirectly by causing increased demand for renewable sources.

Although Moody's direct operations are not emissions-intensive, the company's supply chain emissions dominate its GHG inventory and are likely to be more sensitive to carbon pricing impacts. Moody's ambitious science-based targets, supported by its commitment to sourcing 100% renewable electricity to reduce its Scope 2 emissions, help mitigate the risk associated with potential carbon pricing. Moody's supplier engagement program also reduces its exposure to carbon pricing on the company's purchased goods and services. Mandatory carbon pricing could, however, still increase costs relating to the remainder of Moody's future GHG emissions, as well as the ongoing costs of purchasing 100% renewable electricity for its global operations.

To quantify the possible impacts to Moody's from potential changes to mandatory carbon pricing and to renewable and non-renewable electricity prices, three of the latest low-emissions scenarios described by NGFS were applied (as described previously in [Table 4](#)):

- » Net Zero 2050
- » Divergent Net Zero
- » Delayed Transition

The carbon prices from these scenarios were applied to Moody's direct (Scope 1) and indirect (Scope 2 and 3) GHG emissions. Costs under each NGFS scenario were modeled assuming Moody's achieves its near-term net-zero targets and long-term net-zero target by 2040. The modeling included the expected costs to continue to procure 100% renewable electricity for global operations, based on Moody's Analytics' price predictions.

### Avoided costs due to Moody's Decarbonization Plan

**Table 12** represents the avoided financial costs of carbon pricing due to Moody's emission reduction targets and 100% renewable electricity, under each NGFS scenario. Avoided cost is relative to the costs that would be experienced under a hypothetical base-case in which Moody's future emissions remain unchanged from the base year, and regular grid electricity is used at the offices.

These results show that, independent of the transition scenario, in the long-term, Moody's Decarbonization Plan results in avoided costs and increased financial performance relative to a base-case scenario without climate action. Notably, under NGFS Delayed Transition, due to a lack of carbon pricing in the short- and medium-term, Moody's ongoing commitment to procure 100% renewable electricity results in a minor increase in costs in the short- and medium-term, relative to a no-action scenario. Under this scenario, significant avoided costs still materialize in the long-term. Regardless of the future climate scenario experienced, the company believes that maintaining the commitment to procuring 100% renewable electricity provides a net benefit in ensuring progress towards its climate-related targets and achievement of stakeholders' expectations.

**Table 12:**  
Avoided costs due to Moody's Decarbonization Plan

	Net Zero 2050	Divergent Net Zero	Delayed Transition
	Avoided annual costs (million, USD)	Avoided annual costs (million, USD)	Avoided annual costs (million, USD)
Short-term (2025)	\$2.1	\$7.0	-\$0.1
Medium-term (2030)	\$6.2	\$16.7	-\$0.1
Long-term (2040)	\$21.8	\$52.6	\$23.6

Source: Calculations based on NGFS scenarios, [https://www.ngfs.net/sites/default/files/media/2021/08/27/ngfs\\_climate\\_scenarios\\_phase2\\_june2021.pdf](https://www.ngfs.net/sites/default/files/media/2021/08/27/ngfs_climate_scenarios_phase2_june2021.pdf)

Furthermore, the delayed transition scenario ([Table 4](#)) aims to keep global warming at 2°C, whereas the Net Zero and Divergent Net Zero keep it at 1.5°C. Science shows that this difference can have detrimental implications in the environment. Moody's early climate action aims to support the 1.5°C.

Considering scenario-based costs of carbon pricing and electricity in Table 13, it was found that under each transition scenario, the possible financial impacts varied over time frames. However, the gross annual cost never exceeded Moody's materiality threshold. These results have reinforced the importance of taking early, ambitious action on reducing Moody's value chain emissions and the benefits of its ongoing renewable electricity commitment and maintaining long-term progress towards net-zero. The modeling output continues to guide the company's climate action strategy.

**Table 13:**  
**Gross costs of carbon pricing and renewable electricity procurement<sup>1</sup>**

	Net Zero 2050			Divergent Net Zero			Delayed Transition		
	Carbon price	Cost	Relative impact	Carbon price	Cost	Relative impact	Carbon price	Cost	Relative impact
	USD/mtCO <sub>2</sub> e	Gross annual cost of carbon pricing and 100% renewable electricity (million, USD)	Cost expressed as % of 2021 EBIT	USD/mtCO <sub>2</sub> e	Gross annual cost of carbon pricing and 100% renewable electricity (million, USD)	Cost expressed as % of 2021 EBIT	USD/mtCO <sub>2</sub> e	Gross annual cost of carbon pricing and 100% renewable electricity (million, USD)	Cost expressed as % of 2021 EBIT
Short-term (2025)	\$61.1	\$10.5	0.4%	\$204.3	\$32.4	1.2%	\$0.0	\$1.1	0.04%
Medium-term (2030)	\$96.9	\$13.1	0.5%	\$263.7	\$33.8	1.2%	\$0.0	\$1.1	0.04%
Long-term (2040)	\$174.8	\$12.1	0.4%	\$421.8	\$27.7	1.0%	\$188.9	\$13.0	0.5%

Source: Calculations based on NGFS scenarios, [https://www.ngfs.net/sites/default/files/media/2021/08/27/ngfs\\_climate\\_scenarios\\_phase2\\_june2021.pdf](https://www.ngfs.net/sites/default/files/media/2021/08/27/ngfs_climate_scenarios_phase2_june2021.pdf)

<sup>1</sup> Moody's carbon pricing scenario analysis is based upon a projection of our company's GHG emissions across Scope 1, Scope 2 (market-based) and all reported Scope 3 categories. Our future emissions were modeled assuming achievement of our existing science-based targets, maintaining a linear reduction trend after the target year and net-zero emissions by 2040. Additionally, our future emissions projection assumes continued achievement of 100% renewable electricity use across our global portfolio. Simplified assumptions were made, including assuming our electricity consumption across all time-horizons remains equal to the base year. The cost amounts reported include the gross cost of carbon pricing on our emissions each year, in addition to the scenario dependent cost of renewable electricity procurement for 100% of our global operations, according to carbon prices and region specific renewable electricity prices under the NGFS scenarios. Financial impact results are presented in the form of gross annual costs without applying a discount rate to future values; this choice was made in acknowledgment of the concerns associated with underestimating the social cost of carbon.

## Critical supplier analysis

In 2021, Moody's analyzed the indirect climate risks in Moody's supply chain. Climate maturity and resilience indicators of critical suppliers were explored. Critical suppliers are those that provide fundamental services of strategic importance to the ongoing Moody's operations. The suppliers evaluated were those expected to be exposed to regulatory impact and other high-priority suppliers. Suppliers were scored against a number of climate-related metrics, including CDP and TCFD climate disclosures, as well as science-based targets (Table 14). The results of the analysis are shown in Table 14 below. The outcomes of this assessment will be used to further inform Moody's supplier engagement strategy.

### Table 14: Critical supplier engagement priority results

Based on i) CDP climate disclosures, ii) TCFD disclosures; and iii) Science-based targets

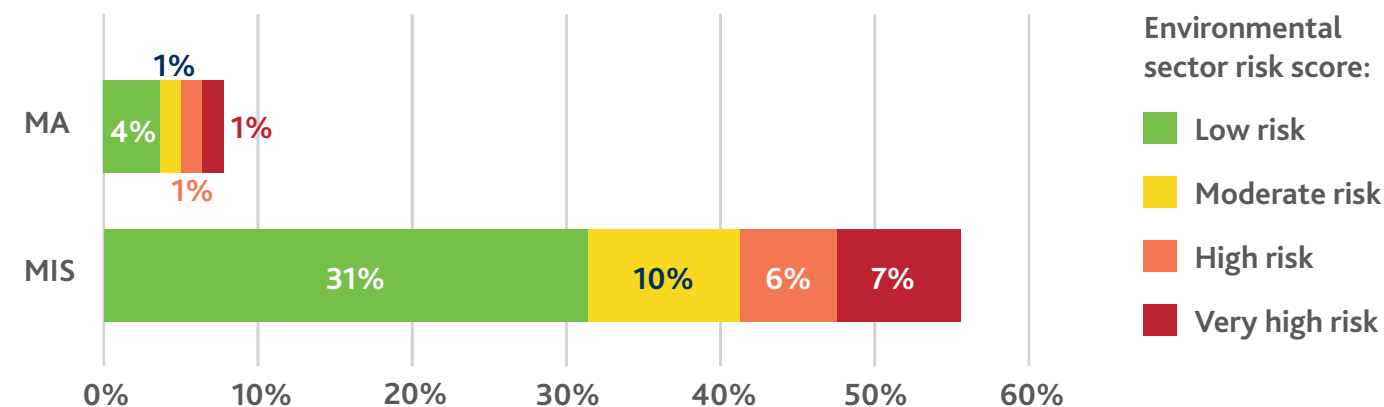
Engagement priority	% of critical suppliers
Low progress on all three categories	12%
Moderate progress on two categories	18%
High progress on one category	30%
Very High no progress in all three categories	40%

## Moody's risk exposure through customers

Moody's revenue exposure to high-emitting corporate sectors was analyzed by classifying MA corporates and MIS corporate finance customers according to MIS's Environmental Heat Maps. Revenue from those customers was then analyzed compared to total MA and MIS revenue. The results are presented in Figure 12, and MCO aggregated results in Figure 13. Over 20% of MCO revenue is associated with corporates from low environmental risk sectors, and 9% of MCO revenue is associated with corporates from high or very high environmental risk sectors. Tracking and disclosing this data enables a higher understanding of climate and environmental risk exposure via customers and can be used to inform future engagement strategies.

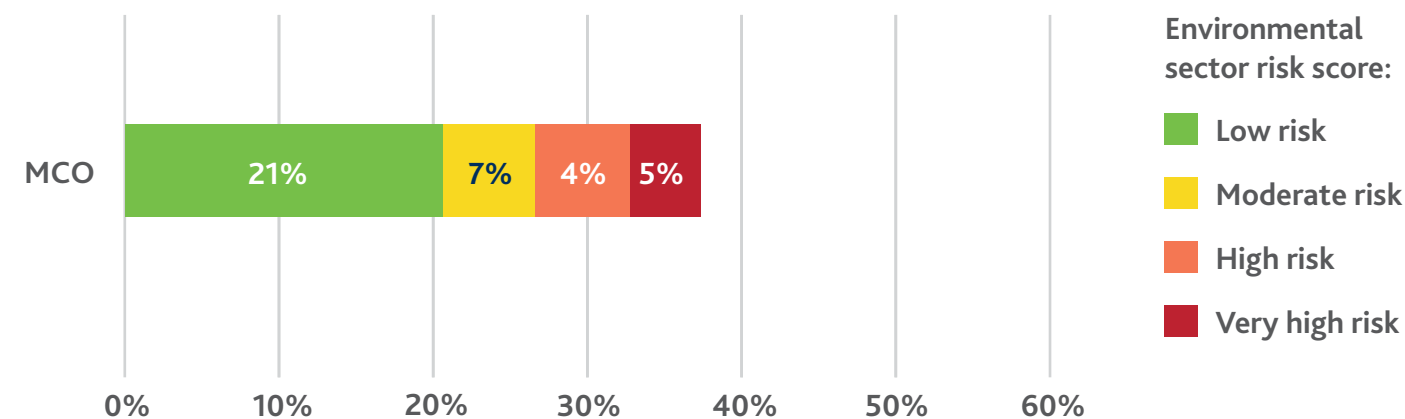
Factors considered in the environmental risk score from the Heat Maps are carbon transition, physical climate risks, water management, waste and pollution, and natural capital. The qualitative risk score categories range from low to very high risk.

Figure 12: MA corporate and MIS corporate finance 2021 revenue breakdown per environmental risk score, as a percent of total MA and MIS revenue



Source: Moody's Investors Service Environmental Heat Maps, <https://esg.moody's.io/esg-credit#heatmap>

Figure 13: MCO corporate 2021 revenue breakdown per environmental risk score, as a percent of total MCO revenue



Source: Moody's Investors Service Environmental Heat Maps, <https://esg.moody's.io/esg-credit#heatmap>

**Table 15:**  
**Transition risk scenario analysis results summary**

● Low impact ● Medium impact ● High impact

Transition risks under NGFS scenarios		Impact level			Management and mitigation			
		Short	Medium	Long				
Policy and legal	Increased pricing of GHG emissions and cost of 100% renewable electricity procurement (cost expressed as % of 2021 EBIT)	Net Zero 2050	0.4%	0.5%	0.4%	Due to Moody's ambitious net-zero emissions goal and science-based targets, the potential introduction of mandatory global carbon pricing, alongside the costs of continuing to procure 100% renewable electricity for its global operations, was assessed to have a low impact on the company's operations (refer to Table 5, Transition analysis). Moody's net-zero strategy is crucial in enabling it to prepare for transition scenarios where carbon pricing increases dramatically due to global developments. Moody's 1.5°C aligned science-based target emissions trajectory to net-zero in 2040 positions the company well to mitigate the impacts of increased carbon pricing.		
		Divergent Net Zero	1.2%	1.2%	1.0%			
		Delayed Transition	0.04%	0.04%	0.5%			
	Enhanced emissions reporting obligations	Net Zero 2050					Increased emission reporting obligations are highly likely under all three transition scenarios with varying timing implications. The impact is expected to be low due to Moody's ongoing commitment to producing an annual TCFD report, as well as full accounting and disclosure of its GHG inventory, including attainment of third-party assurance. Moody's teams monitor both existing and emerging regulation, ensuring processes are developed to enable full compliance on mandatory reporting obligations.	
		Divergent Net Zero						
		Delayed Transition						
	Mandates and regulations on existing products and services	Net Zero 2050						The impact of potential mandates on existing products and services is expected to be low due to Moody's ongoing strategy to embed climate considerations into its governance, operations, products and services. As detailed in the opportunities section, MIS's proactive approach to integrating ESG factors into its credit risk analysis positions the business well in terms of potential mandatory regulations to include such factors. In addition to risk, Moody's is also moving quickly to realize the market opportunity that these new regulations present to its products and services (Table 2). Moody's has the ongoing opportunity to integrate climate and ESG into its products and services, and to expand its Climate Solutions suite. The increase in mandatory regulatory reporting, including alignment to TCFD and the EU Taxonomy, and the roll out of climate stress testing for banks and insurers, has increased demand for the company's ESG and climate-related products across key markets in the EU, APAC and North America.
		Divergent Net Zero						
		Delayed Transition						
	Exposure to litigation	Net Zero 2050				Moody's faces the risk of potential exposure to litigation from customers or third parties in connection with their use of its data, products and/or services. To mitigate and manage this risk, Moody's works to make its products and services based on the best available information and data. Possible data coverage gaps or data quality issues are addressed via a suite of solutions, including proxy comparisons on climate data and continued updates of the company's methodologies using the best available science and research. Moody's ongoing focus on data quality, combined with its dedication to remediating any gaps, improves the company's data quality and results in a low risk of litigation exposure relating to its data.		
		Divergent Net Zero						
		Delayed Transition						



**Table 15:**  
**Transition risk scenario analysis results summary (continued)**

● Low impact ● Medium impact ● High impact

Transition risks under NGFS scenarios		Impact level			Management and mitigation		
		Short	Medium	Long			
Technology	Costs to transition to lower-emission technology	Net Zero 2050			<p>If a mandatory price is introduced, despite expected increases in renewable energy prices, the costs to the company's procurement of 100% renewable electricity is more likely to be lower than the avoided costs of carbon pricing based on this modeling. Moody's renewable electricity commitment avoids long-term costs under all scenarios explored.</p>		
		Divergent Net Zero					
		Delayed Transition					
Market	Changing customer behavior	Net Zero 2050				<p>Changing customer behavior presents a low impact risk due to Moody's proactive approach to embedding climate considerations across its products and services. Moody's Decarbonization Plan entails a strategy to also support its customers in decarbonizing their own supply chain. The company constantly monitors current and emerging market dynamics to continue to provide products and services that meet its customers' changing demands with regards to climate and ESG. Moody's also continues to build and expand its second party opinion capabilities, including green bonds, to better meet market needs, scale its operations and ensure its analysts are close to local customers across regions.</p>	
		Divergent Net Zero					
		Delayed Transition					
Reputation	Stigmatization of sector	Net Zero 2050					<p>The credit rating agency industry has faced stigmatization for not incorporating climate considerations into credit ratings, or for not providing transparency on how these considerations are incorporated into credit ratings. MIS systematically incorporates material climate considerations into its credit ratings. MIS provides further transparency regarding the credit risks and benefits of climate considerations through its Issuer Profile and Credit Issuer Scores. These scores also provide transparency into the impact on an issuer's credit rating from ESG considerations, which includes the potential long-term impacts of transition and physical climate-related risks. Stigmatization for association with high-carbon emitters is limited for Moody's businesses due to continued response as part of its Decarbonization Plan, integrating climate issues throughout its products and services, and its latest commitment to align Moody's products and services to net-zero through NZFSPA.</p>
		Divergent Net Zero					
		Delayed Transition					
	Increased stakeholder concern or negative stakeholder feedback	Net Zero 2050			<p>Moody's continually addresses stakeholder expectations through ongoing climate advocacy, transparency and stakeholder engagement on climate-related issues. In 2021, for example, Moody's Decarbonization Plan was put to a shareholder vote and received 93% of votes in favor. Moody's climate efforts are increasingly considered from a reputational perspective as an element for consideration in talent attraction and retention. The company's ongoing commitment and net-zero goals secure its position and facilitate in demonstrating Moody's as an employer that drives climate progress.</p>		
		Divergent Net Zero					
		Delayed Transition					

# Risk Management

## RISK IDENTIFICATION AND ASSESSMENT PROCESS

Moody's risk identification, assessment and management approaches are constantly evolving in line with best practices and the emergence of new capabilities. Most recently, Moody's business continuity planning has included providing guidance to its employees on issues that could impact their ability to work remotely, such as physical climate risks. Moody's climate risk identification and assessment processes are integrated throughout several tiers of its business units and roles. Business units are responsible for undertaking due diligence and reporting any risks and opportunities associated with their activities to the Enterprise Risk Management (ERM) function. Risks are assessed in terms of size, the boundary of impact and financial or operational implications for Moody's offerings. The CEO, who also serves on the Board, provides an additional tier of risk identification to submit any newly detected risks or opportunities to ERM. The Stakeholder Sustainability function tracks and evaluates climate risks across current and emerging regulations, technology, reputation, as well as acute and chronic physical risk and raises them to ERM as appropriate.

Under the oversight of the Board of Directors and its committees, the CEO has established an Enterprise-Wide Risk Committee, composed of the CEO and his direct reports, which includes the Chief Risk Officer (CRO). The Enterprise-Wide Risk Committee reviews the work on ERM and undertakes regular independent reviews of currently tracked risks with the aim of identifying potential new risks and opportunities for further exploration. Moody's CRO, who reports to the CEO, provides oversight and monitoring of material risks that have the potential to impact the company. The CRO is responsible for the risk management across Moody's, which is structurally independent from the company's business lines, and oversees risk identification and monitoring.

Figure 14:  
Moody's climate risk management



Table 16:

**Moody's response to the management of climate-related risks is undertaken through a variety of business functions depending on the categorization of risk**

Risk category	Risk management process description
<b>Current regulation</b>	Risks resulting from non-compliance with current regulation are managed internally by a wide range of experts in Moody's corporate governance model (including Legal, Internal Audit, Compliance, Government Public and Regulatory Affairs (GPRA), Stakeholder Sustainability, Finance and Regional Businesses). These functions work together as appropriate to discuss business implications of current regulation to contribute to Moody's ongoing compliance with current regulation.
<b>Emerging regulation</b>	GPRA is responsible for monitoring emerging laws and regulations and for engaging with policymakers and regulators as required. The Stakeholder Sustainability team is also responsible for conducting regulation-related climate scenario analysis and assessing Moody's emerging regulatory risk that the scenarios could pose.
<b>Technology</b>	Technology risks are managed throughout portfolio-wide monitoring of energy and utility usage and costs, including scenario analysis to understand the implications of potential cost rises. Moody's voluntary commitment to 100% renewable electricity across its operations reduces the company's exposure to costs related to the transition to low-carbon energy sources.
<b>Legal</b>	Moody's Legal division is responsible for reviewing new product offerings and initiatives in order to assess and consider the risks involved in climate-related issues.
<b>Market</b>	Market risks are managed by continually monitoring customer behavior in conjunction with Moody's strategy of products and services. Moody's newest Climate offering, and the integration of Climate considerations into the products and services across Moody's, are intended to address the business opportunities and risks associated with market risk.
<b>Reputation</b>	Moody's is highly visible within the capital markets and attracts many diverse stakeholders, including individuals, organizations and indirect stakeholders concerned with corporate behavior and action. This visibility heightens the potential impact of climate-related risks on Moody's operations and offerings. Potential risks to the company's reputation are managed through efforts to embed its climate strategy throughout its operations and work to provide transparency on Moody's progress.
<b>Physical risks</b>	Moody's business continuity management function leverages the company's physical risk assessment to support viability of continuity plans. Moody's is currently in the process of implementing enhanced risk management tools to enable the mapping of operational resiliency and business interruption risk assessments. These innovative and new systems will allow Moody's to reduce recovery and interruption times further.

## MANAGEMENT PROCESS

Climate-related risks are integrated throughout Moody's company-wide management process and are overseen by the Stakeholder Sustainability team. Moody's CRO provides the oversight and monitoring of material risks that have the potential to impact the company, including climate-related risks. Physical climate events are managed through ERM, as well as the Crisis Management and Global Business Continuity teams. Any material climate-related risks and mitigating actions identified by ERM are also presented to the Audit Committee.

## INTEGRATION INTO OVERALL RISK MANAGEMENT

Moody's is working to further embed climate-related risk considerations across its company-wide risk management processes. Components of the climate risk analysis presented in this report assists to integrate climate risk into the company's risk management.

ERM is designed to establish a standard, organization-wide understanding of risk management and to define roles and responsibilities based on the 2017 Committee of Sponsoring Organizations (COSO) framework.

# Metrics and Targets

## METRICS TO ASSESS CLIMATE-RELATED RISKS AND OPPORTUNITIES

### Carbon-adjusted earnings per share

The possible impact of carbon pricing on Moody's share price has been evaluated. Adjusted diluted earnings per share (EPS) for 2021 were carbon-adjusted by applying the 2021 costs of carbon pricing from NGFS transition scenarios and Moody's internal carbon price on business travel. The 2021 results in terms of impact on Moody's share price are described in **Table 17**. Applying the theoretical global carbon prices described under each NGFS scenario on 2021 emissions was found to have very low overall impact on Moody's carbon-adjusted EPS (diluted weighted average shares outstanding). The Delayed Transition scenario does not apply a carbon price in 2021; therefore, there was no impact, and the Net Zero 2050 scenario results in approximately 0.05% percent reduction from Moody's actual adjusted diluted EPS. The Divergent Net Zero scenario, which has the highest 2021 carbon price of \$20.86 mtCO<sub>2</sub>e, had the largest impact on the company's adjusted diluted EPS, although this is still below 0.2%. Moody's internal carbon price on business travel, although having a higher applied rate, only had a negligible impact (0.01%) on EPS due to limited travel emissions generated in 2021.

### Internal carbon pricing

In 2021, Moody's continued to use an internal carbon price on business travel of \$50/mtCO<sub>2</sub>e as a mechanism to limit its travel-related GHG emissions and to help fund climate-

related initiatives. Moody's also continues to use a shadow price on carbon, a theoretical cost, to evaluate new facility leases on their GHG emissions performance.

**Table 17: Moody's adjusted earnings per share (EPS) based on carbon price scenarios**

	Net Zero 2050	Divergent Net Zero	Delayed Transition	Moody's internal carbon price
	Scope 1, Scope 2 (market-based) and Scope 3 emissions	Scope 1, Scope 2 (market-based) and Scope 3 emissions	Scope 1, Scope 2 (market-based) and Scope 3 emissions	Business travel emissions
	Total 2021: 122,563 mtCO <sub>2</sub> e	Total 2021: 122,563 mtCO <sub>2</sub> e	Total 2021: 122,563 mtCO <sub>2</sub> e	Total 2021: 1,480 mtCO <sub>2</sub> e
Carbon price (USD/mtCO <sub>2</sub> e)	\$12.21	\$40.86	\$0.00	\$ 50.00
2021 pre-tax cost of carbon (million, USD)	\$1.50	\$5.01	\$0.00	\$ 0.17
Carbon-adjusted net income (million, USD)	\$ 2,753.50	\$ 2,749.99	\$2,755.00	\$2,754.84
Carbon-adjusted net income, net of tax (million, USD)	\$ 2,212.80	\$ 2,209.98	\$2,214.00	\$2,213.87
Carbon-adjusted diluted EPS	\$11.78	\$11.76	\$11.78	\$11.78
% reduction from actual	(0.05)%	(0.18)%	0.00%	(0.01)%

Source: Calculations based on NGFS scenarios, [https://www.ngfs.net/sites/default/files/media/2021/08/27/ngfs\\_climate\\_scenarios\\_phase2\\_june2021.pdf](https://www.ngfs.net/sites/default/files/media/2021/08/27/ngfs_climate_scenarios_phase2_june2021.pdf)

### Tracking climate-related metrics

Energy, waste and GHG emissions are tracked and monitored at a site level. Evaluation of consumption trends helps Moody's identify, assess, manage and mitigate climate-related risks on resource consumption and GHG emissions. A summary of Moody's utility expenditure is found in **Table 18**. Due to the COVID-19 pandemic and the implementation of a hybrid work model, a downturn in utility spend was observed. Disruption time and financial impacts caused by major climate-related events are also tracked across Moody's entire portfolio. The data will inform the company's business continuity planning.

### Moody's utility spend

In 2021, utility expenses represented over USD \$2 million or 0.1% of operating costs. A hypothetical 10% rise in utility and energy prices across the board could raise electricity spend by approximately USD \$200,000 annually.<sup>1</sup>

**Table 18: Moody's utility spend**

	2019	2020	2021
Utility expenditure (million \$, rounded)	\$5	\$3	\$2
% of operating costs	0.2%	0.1%	0.1%

<sup>1</sup>The utility spend data currently excludes data from 2021 acquisitions.

## Scope 1, 2 and 3 emissions

Moody's Scope 1, 2 and 3 emissions are detailed in Table 19 for 2019-2021. The company's 2021 inventory now includes investment-related emissions (Category 15), as well as restated Business Travel (Category 6) and Employee Commuting (Category 7) emissions to include well-to-wheel emissions to align to the SBTi Target Validation Protocol and Transport Guidance.

Emissions have been externally assured, and were calculated in accordance with the World Resources Institute/World Business Council for Sustainable Development GHG Protocol Corporate Accounting and Reporting Standard, SBTi Guidance and the latest SBTi Target Validation Protocol.

**Table 19: GHG inventory breakdown and intensity metrics<sup>1</sup>**

### 2021 Total Scope 1, 2 and 3 emissions (mtCO<sub>2</sub>e)

**Total emissions = 122,563**

**Scope 1: 851**

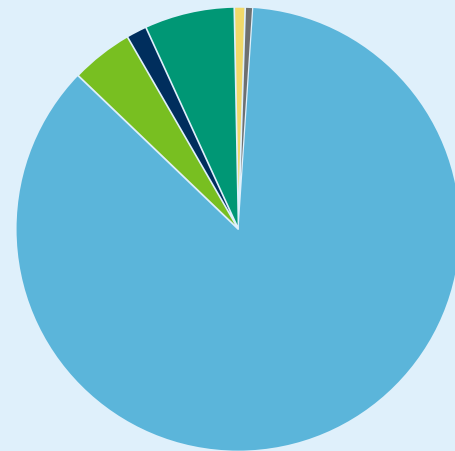
Scope 1

**Scope 2: 432**

Scope 2 (market-based)<sup>2</sup>

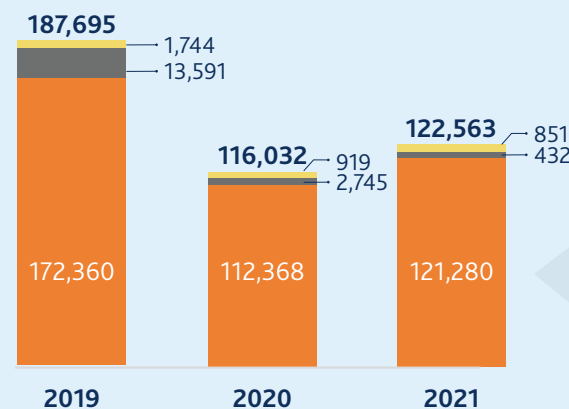
**Scope 3<sup>4</sup>: 121,280**

Scope 3

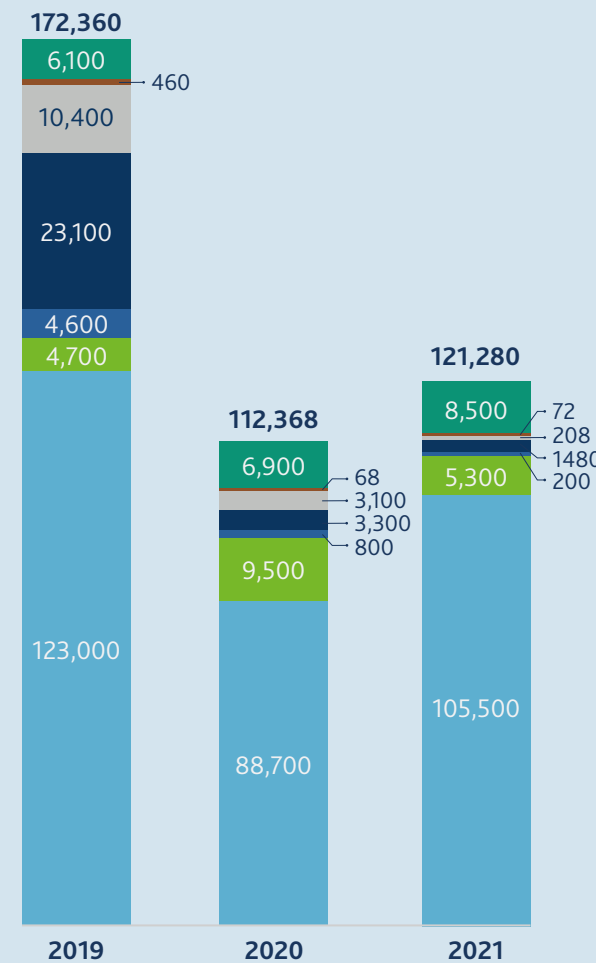


### GHG Emissions (mtCO<sub>2</sub>e)

- Investments
- Waste generated in operations
- Employee commuting<sup>3</sup>
- Business travel<sup>3</sup>
- Fuel and energy-related activities
- Capital goods
- Purchased goods and services



### Breakdown of Scope 3 emissions (mtCO<sub>2</sub>e)



### GHG intensity

	2019	2020	2021
GHG intensity (Scope 1 and Scope 2 mtCO <sub>2</sub> e/sqft) <sup>4</sup>	0.006	0.001	0.001
GHG intensity (Scope 1 and Scope 2 mtCO <sub>2</sub> e/\$ million of revenue)	3	1	0.2

### Scope 3 categories evaluated by Moody's that are zero or not material

Upstream transportation and distribution	Emissions are included in purchased goods and services category
Upstream leased assets	Not relevant – All leases included in Scope 1 and 2
Downstream transportation and distribution	Not relevant – Moody's does not distribute or transport products
Use of sold goods	Not relevant – Moody's does not produce products that directly consume fuel or energy
End-of-life treatment of sold products	Not relevant – Moody's does not produce physical products
Downstream leased assets	Not relevant – Moody's does not own any assets that are leased downstream
Franchises	Not relevant – Moody's does not operate any franchises

<sup>1</sup> 2019 and 2020 GHG emissions were retroactively recalculated due to improved access to vendor spend data and M&A activity. Consequently, our science-based targets for reducing our GHG emissions were re-submitted to the Science Based Targets initiative (SBTi) and coverage was re-validated.

<sup>2</sup> Scope 2 (location-based) emissions were as follows: 2021 - 6,878 mtCO<sub>2</sub>e; 2020 - 8,767 mtCO<sub>2</sub>e; and 2019 - 14,035 mtCO<sub>2</sub>e.

<sup>3</sup> Business travel and employee commuting emissions were restated to include well-to-wheel emissions to ensure alignment to the SBTi Target Validation Protocol and Transport Guidance.

<sup>4</sup> Emissions include all offices under financial control. Square footage includes Moody's managed offices and excludes shared-space offices due to data limitations. The impact is expected to be not material, with emissions in shared-space offices accounting for approximately 0.6% of total GHG inventory in 2021.

## Climate-related targets and progress on Moody's Decarbonization Plan

In 2021, Moody's accelerated the ambition to reach net-zero emissions across its operations and value chain by 2040, a decade earlier than the previous commitment to the UNGC Business Ambition for 1.5 degrees. Moody's road-tested the Science Based Targets initiative's (SBTi) net-zero corporate standard, and as a result, Moody's is one

of the first companies to set a validated long-term net-zero target. The company's near-term net-zero targets covering Scope 1, Scope 2 and Scope 3 were first validated by SBTi in July 2020, and are aligned with a 1.5°C trajectory.

**Table 20:**  
Energy consumption metrics

Energy consumption	2019	2020	2021
Total energy (MWh)	48,251	32,166	27,969
Energy intensity ratio per sq ft (kWh/sq ft) <sup>1</sup>	19.8	13	11.9
<b>Scope 1 - direct</b>			
Natural gas (MWh)	5,211	2,886	4,299
Other direct (diesel, liquefied petroleum gas) (MWh)	918	466	75
<b>Scope 2 - indirect</b>			
Total electricity consumption from operations (MWh)	36,477	24,377	20,619
Renewable electricity use	11%	100%	100%
Out of which covered by Energy Attribute Certificates purchased by Moody's directly	0%	84%	87%
Other indirect (purchased steam and cooling) (MWh)	5,645	4,437	2,976

## 2021 PROGRESS AGAINST THE DECARBONIZATION PLAN

- » Moody's [Decarbonization Plan](#) was subject to a vote at its 2021 Annual Meeting of Stockholders, signaling that climate considerations and action are now an integral part of the company's business strategy, governance and corporate performance.
- » Procured 100% renewable electricity for Moody's global operations.
- » Continued to offset Moody's carbon footprint — including all emissions from operations, business travel and employee commuting — since 2000, when Moody's became a public company. This includes retrospective offsetting to account for the company's re-baselined emissions footprint.
- » Implemented various projects to promote energy efficiency across Moody's global real estate portfolio:
  - Increased temperature set-point in technology rooms;
  - Promoted participation in the Daylight Hour campaign, organized by the Building Energy Exchange to raise awareness about using natural light instead of electric light; and
  - Installed light-saving mechanisms in some offices, such as sensor motion lights and energy-saving LED lights.
- » Continued to use an Internal Carbon Fee of USD \$50 / mtCO<sub>2</sub>e on business travel.
- » Continued to apply a shadow price on carbon to evaluate new office leases.
- » Launched an updated company-wide [Environmental Sustainability Policy](#).
- » Implemented quarterly meetings among Moody's global office representatives to share best practices on reducing emissions from its operations.
- » Continued to engage with Moody's stakeholders on climate-related issues.
- » Climate-related supplier engagement efforts:
  - Moody's [Supplier Code of Conduct](#) encourages suppliers to disclose their carbon footprint and set science-based targets of their own;
  - Engaged nearly 500 suppliers in partnership with CDP supply chain membership, and conducted targeted engagement on approximately 75 key suppliers; and
  - Starting in 2022, Sourcing Managers are required to complete a Responsible Sourcing training module with a focus on factoring responsible sourcing metrics into award decisions — including science-based targets and supplier diversity metrics.

<sup>1</sup> Energy activity data includes all offices under financial control. Square footage includes Moody's managed offices and excludes shared-space offices due to data limitations. The impact is expected to be not material, with emissions in shared-space offices accounting for approximately 0.6% of total GHG inventory in 2021.

## Moody's validated science-based targets<sup>1</sup>

**50%**

reduction in absolute Scope 1 and Scope 2 (market-based) GHG emissions by 2030, from a 2019 base year

**15%**

reduction in Scope 3 GHG emissions from fuel and energy-related activities, business travel and employee commuting by 2025, from a 2019 base year.

**60%**

of Moody's suppliers by spend covering purchased goods and services and capital goods to have science-based targets by 2025

Long-term net-zero target

**90%**

emissions reductions in Scope 1, 2 and 3 absolute emissions by 2040, from a 2019 base year



- » Wind project (Costa Rica)
- » Wind project (India)
- » Forestation (Canada)

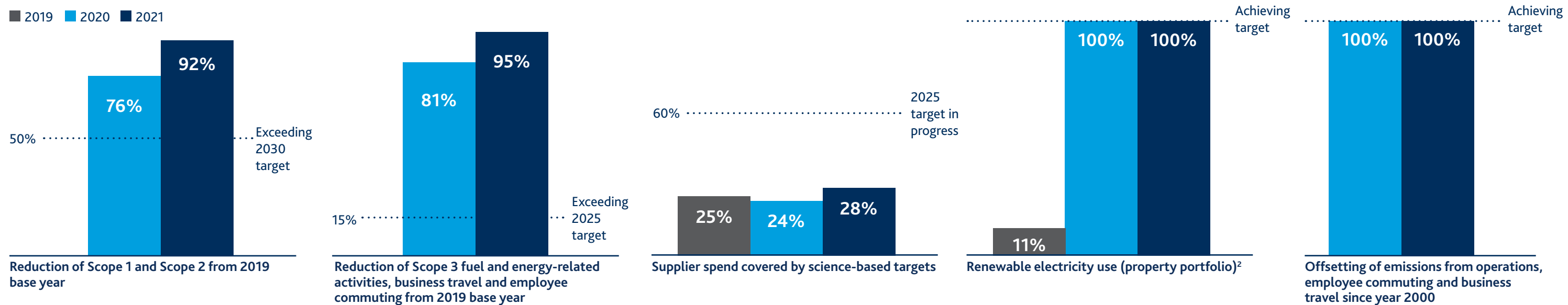
### Gold Standard<sup>®</sup>

- » Clean cookstoves project (Kenya)
- » Boreholes (Malawi)
- » Clean cookstoves project (India)

Moody's applies a quality framework toward offset project selection, only funding certified projects. Moody's carbon offset projects are chosen based on the geographies where it operates, alignment with SDGs and co-benefits, and are listed on reputable registries that guarantee third-party verifications.

**Table 21: Moody's 2021 performance against Decarbonization Plan<sup>1</sup>**

■ 2019 ■ 2020 ■ 2021



<sup>1</sup> Our progress on science-based targets was retroactively recalculated due to improved access to vendor spend data and M&A activity. Consequently, our targets were re-submitted to the Science Based Targets initiative (SBTi) and coverage was re-validated.

<sup>2</sup> Renewable electricity percentage is reported based on originally verified electricity consumption value because it is not possible to buy renewable electricity retroactively due to M&A activity; therefore, the 2020 restated verification opinion shows a decrease in percentage of renewable electricity.

# Looking Forward

**At Moody's, the ongoing need for disclosure and transparency on climate-related issues is viewed as a key business priority. Upcoming regulations on climate disclosures will also continue to inform the company's reporting.**

The company's priorities ahead involve:

- » Continue to meet all requirements as the climate regulatory landscape evolves.
- » Continue to expand coverage of our assessments that include climate considerations.
- » Further integrate and harmonize the Climate Solutions methodologies, between RMS and Moody's legacy climate models.
- » As part of Moody's involvement in GFANZ, contribute to the development of net-zero standards within finance.
- » Explore how to further link its sustainability strategy to financial instruments.
- » With an anticipated rise in business travel, review the associated emissions impact and evaluate opportunities to further reduce emissions.

In unison, Moody's goal is to continually assess its climate-related financial risks, opportunities and related strategy requirements.

Get in touch:

Email: [sustainability@moodys.com](mailto:sustainability@moodys.com)





## “Safe Harbor” Statement under the Private Securities Litigation Reform Act of 1995

Certain statements contained in this document are forward-looking statements and are based on future expectations, plans and prospects for Moody's business and operations that involve a number of risks and uncertainties. The forward-looking statements in this document are made as of the date hereof, and Moody's disclaims any duty to supplement, update or revise such statements on a going-forward basis, whether as a result of subsequent developments, changed expectations or otherwise. In connection with the “safe harbor” provisions of the Private Securities Litigation Reform Act of 1995, Moody's is identifying certain factors that could cause actual results to differ, perhaps materially, from those indicated by these forward-looking statements. Those factors, risks and uncertainties include, but are not limited to the global impact of the crisis in Ukraine on volatility in the U.S. and world financial markets, on general economic conditions and GDP in the U.S. and worldwide, and its potential for further worldwide credit market disruptions and economic slowdowns; the impact of COVID-19 on world financial markets, on general economic conditions and on Moody's own operations and personnel; future worldwide credit market disruptions or economic slowdowns, which could affect the volume of debt and other securities issued in domestic and/or global capital markets; other matters that could affect the volume of debt and other securities

issued in domestic and/or global capital markets, including regulation, credit quality concerns, changes in interest rates, inflation and other volatility in the financial markets such as that due to Brexit and uncertainty as companies transition away from LIBOR; the level of merger and acquisition activity in the U.S. and abroad; the uncertain effectiveness and possible collateral consequences of U.S. and foreign government actions affecting credit markets, international trade and economic policy, including those related to tariffs, tax agreements and trade barriers; concerns in the marketplace affecting our credibility or otherwise affecting market perceptions of the integrity or utility of independent credit agency ratings; the introduction of competing products or technologies by other companies; pricing pressure from competitors and/or customers; the level of success of new product development and global expansion; the impact of regulation as an NRSRO, the potential for new U.S., state and local legislation and regulations; the potential for increased competition and regulation in the EU and other foreign jurisdictions; exposure to litigation related to our rating opinions, as well as any other litigation, government and regulatory proceedings, investigations and inquiries to which Moody's may be subject from time to time; provisions in U.S. legislation modifying the pleading standards and EU regulations modifying the liability standards, applicable to credit rating agencies

in a manner adverse to credit rating agencies; provisions of EU regulations imposing additional procedural and substantive requirements on the pricing of services and the expansion of supervisory remit to include non-EU ratings used for regulatory purposes; the possible loss of key employees; failures or malfunctions of our operations and infrastructure; any vulnerabilities to cyber threats or other cybersecurity concerns; the outcome of any review by controlling tax authorities of Moody's global tax planning initiatives; exposure to potential criminal sanctions or civil remedies if Moody's fails to comply with foreign and U.S. laws and regulations that are applicable in the jurisdictions in which Moody's operates, including data protection and privacy laws, sanctions laws, anti-corruption laws, and local laws prohibiting corrupt payments to government officials; the impact of mergers, acquisitions, such as our acquisition of RMS, or other business combinations and the ability of Moody's to successfully integrate acquired businesses; currency and foreign exchange volatility; the level of future cash flows; the levels of capital investments; and a decline in the demand for credit risk management tools by financial institutions. These factors, risks and uncertainties as well as other risks and uncertainties that could cause Moody's actual results to differ materially from those contemplated, expressed, projected, anticipated or implied in the forward-looking statements are described in greater

detail under “Risk Factors” in Part I, Item 1A of Moody's annual report on Form 10-K for the year ended December 31, 2021, and in other filings made by Moody's from time to time with the SEC or in materials incorporated herein or therein. Stockholders and investors are cautioned that the occurrence of any of these factors, risks and uncertainties may cause Moody's actual results to differ materially from those contemplated, expressed, projected, anticipated or implied in the forward-looking statements, which could have a material and adverse effect on Moody's business, results of operations and financial condition. New factors may emerge from time to time, and it is not possible for Moody's to predict new factors, nor can Moody's assess the potential effect of any new factors on it. Forward-looking and other statements in this document may also address our corporate responsibility progress, plans, and goals (including sustainability and environmental matters), and the inclusion of such statements is not an indication that these contents are necessarily material to investors or required to be disclosed in the company's filings with the Securities and Exchange Commission. In addition, historical, current, and forward-looking sustainability-related statements may be based on standards for measuring progress that are still developing, internal controls and processes that continue to evolve, and assumptions that are subject to change in the future.

# ASSURANCE STATEMENT 2021



## VERIFICATION OPINION DECLARATION GREENHOUSE GAS EMISSIONS

To: Moody's Corporation

Apex Companies, LLC (Apex) was engaged to conduct an independent verification of the greenhouse gas (GHG) emissions reported by Moody's Corporation (Moody's) for the period stated below. This verification opinion declaration applies to the related information included within the scope of work described below.

The determination of the GHG emissions is the sole responsibility of Moody's. Moody's is responsible for the preparation and fair presentation of the GHG emissions statement in accordance with the criteria. Apex's sole responsibility was to provide independent verification opinion on the accuracy of the GHG emissions reported, and on the underlying systems and processes used to collect, analyze and review the information. Apex is responsible for expressing an opinion on the GHG statement based on the verification. Verification activities applied in a limited level of verification are less extensive in nature, timing and extent than in a reasonable level of assurance verification.

**Boundaries of the reporting company GHG emissions covered by the verification:**

- Financial Control
- Worldwide

Types of GHGs: CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, HFCs, CFCs, HCFCs

**GHG Emissions Statement:**

- **Scope 1:** 851 metric tons of CO<sub>2</sub> equivalent
- **Scope 2 (Location-Based):** 6,678 metric tons of CO<sub>2</sub> equivalent
- **Scope 2 (Market-Based):** 432 metric tons of CO<sub>2</sub> equivalent
- **Scope 3:**
  - Purchased Goods and Services: 105,500 metric tons of CO<sub>2</sub> equivalent
  - Capital Goods: 5,300 metric tons of CO<sub>2</sub> equivalent
  - Fuel and Energy-Related Activities:
    - Location-Based: 3,100 metric tons of CO<sub>2</sub> equivalent
    - Market-Based: 220 metric tons of CO<sub>2</sub> equivalent
  - Waste Generated in Operations: 72 metric tons of CO<sub>2</sub> equivalent
  - Business Travel: 1,480 metric tons of CO<sub>2</sub> equivalent
  - Employee Commuting: 208 metric tons of CO<sub>2</sub> equivalent
  - Investments: 8,500 metric tons of CO<sub>2</sub> equivalent
- **Supplier Spend with Science-Based Target (%):** 29%
- **Energy Use (electricity):** 20,619 megawatt hours
- **Renewable Energy (% renewable energy and purchased renewable energy credits):** 100%
- **Scope 1 + Scope 2 (Market-Based) + Scope 3 Business Travel + Scope 3 Employee Commuting =** 2,571 metric tons of CO<sub>2</sub> equivalent



- **GHG Emissions Offsets Retired for 2021** [achieving carbon neutrality for Scope 1, Scope 2 (Market-Based), Scope 3 Business Travel, and Scope 3 Employee Commuting emissions]: 2,571 metric tons of CO<sub>2</sub> equivalent
- **GHG Emissions Offsets Retired for 2019 and 2020** [achieving carbon neutrality for restated Scope 1, Scope 2 (Market-Based), Scope 3 Business Travel, and Scope 3 Employee Commuting emissions]: 16,635 metric tons of CO<sub>2</sub> equivalent

Data and information supporting the Scope 1, Scope 2, and Scope 3 GHG emissions assertion were historical in nature for the most part. In some cases, data were estimated rather than historical in nature.

**Period covered by GHG emissions verification:**

- January 1, 2021 to December 31, 2021

**Criteria against which verification conducted:**

- World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) Greenhouse Gas Protocol, Corporate Accounting and Reporting Standard
- WRI/WBCSD Corporate Value Chain (Scope 3) Accounting and Reporting Standard

**Reference Standard:**

- ISO 14064-3 Second Edition 2019-04: Greenhouse gases – Part 3: Specification with guidance for the verification and validation of greenhouse gas statements

**Level of Assurance and Qualifications:**

- Limited
- This verification used a materiality threshold of +/-5% for aggregate errors in sampled data for each of the above indicators.

**GHG Verification Methodology:**

Evidence-gathering procedures included but were not limited to:

- Interviews with relevant personnel of Moody's;
- Review of documentary evidence produced by Moody's;
- Review of Moody's data and information systems and methodology for collection, aggregation, analysis and review of information used to determine GHG emissions; and
- Audit of sample of data used by Moody's to determine GHG emissions.

**Verification Opinion:**

Based on the process and procedures conducted, there is no evidence that the GHG emissions statement shown above:

- is not materially correct and is not a fair representation of the GHG emissions data and information; and
- has not been prepared in accordance with the WRI/WBCSD GHG Protocol Corporate Accounting and Reporting Standard (Scope 1 and 2), and WRI/WBCSD Greenhouse Gas Protocol Corporate Value Chain Accounting and Reporting Standard (Scope 3).

It is our opinion that Moody's has established appropriate systems for the collection, aggregation and analysis of quantitative data for determination of these GHG emissions for the stated period and boundaries.



**Statement of Independence, Impartiality and Competence**

Apex is an independent professional services company that specializes in Health, Safety, Social and Environmental management services including assurance with over 30 years history in providing these services.

No member of the verification team has a business relationship with Moody's, its Directors or Managers beyond that required of this assignment. We conducted this verification independently and to our knowledge there has been no conflict of interest.

Apex has implemented a Code of Ethics across the business to maintain high ethical standards among staff in their day-to-day business activities.

The verification team has extensive experience in conducting assurance over environmental, social, ethical and health and safety information, systems and processes, has over 20 years combined experience in this field and an excellent understanding of Apex's standard methodology for the verification of greenhouse gas emissions data.

**Attestation:**

Trevor A. DeSighi, Lead Verifier  
Program Manager  
Apex Companies, LLC  
Pleasant Hill, California

John Rohde, Technical Director  
Principal Consultant  
Apex Companies, LLC  
Lafayette, Colorado

March 14, 2022

This verification opinion declaration, including the opinion expressed herein, is provided to Moody's Corporation and is solely for the benefit of Moody's Corporation in accordance with the terms of our agreement. We consent to the release of this statement by you to CDP in order to satisfy the terms of CDP disclosure requirements but without accepting or assuming any responsibility or liability on our part to CDP or to any other party who may have access to this statement.

# ASSURANCE STATEMENT 2020



## VERIFICATION OPINION GREENHOUSE GAS EMISSIONS

To: Moody's Corporation

APEX Companies LLC, (Apex) was engaged to conduct an independent verification of the greenhouse gas (GHG) emissions reported by Moody's Corporation (Moody's) for the period stated below. This Verification Opinion applies to the related information included within the scope of work described below.

The determination of the GHG emissions is the sole responsibility of Moody's. Moody's is responsible for the preparation and fair presentation of the GHG emissions statement in accordance with the criteria. Apex's sole responsibility was to provide independent verification opinion on the accuracy of the GHG emissions reported, and on the underlying systems and processes used to collect, analyze and review the information. Apex is responsible for expressing an opinion on the GHG statement based on the verification. Verification activities applied in a limited level of assurance verification are less extensive in nature, timing and extent than in a reasonable level of assurance verification.

### Boundaries of the reporting company GHG emissions covered by the verification:

- Financial Control
- Worldwide

Types of GHGs: CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, HFCs, CFCs, HCFCs

### GHG Emissions Statement:

- **Scope 1:** 919 metric tons of CO<sub>2</sub> equivalent
- **Scope 2 (Location-Based):** 8,767 metric tons of CO<sub>2</sub> equivalent
- **Scope 2 (Market-Based):** 2,745 metric tons of CO<sub>2</sub> equivalent
- **Scope 3:**
  - Purchased Goods and Services: 88,700 metric tons of CO<sub>2</sub> equivalent
  - Capital Goods: 9,500 metric tons of CO<sub>2</sub> equivalent
  - Fuel and Energy-Related Activities:
    - Location-Based: 2,700 metric tons of CO<sub>2</sub> equivalent
    - Market-Based: 800 metric tons of CO<sub>2</sub> equivalent
  - Waste Generated in Operations: 68 metric tons of CO<sub>2</sub> equivalent
  - Business Travel: 3,300 metric tons of CO<sub>2</sub> equivalent
  - Employee Commuting: 3,100 metric tons of CO<sub>2</sub> equivalent
  - Investments: 6,900 metric tons of CO<sub>2</sub> equivalent
- **Supplier Spend with Science-Based Target (%)**: 24%
- **Energy Use (electricity)**: 24,377 megawatt hours
- **Renewable Energy (% renewable energy and purchased renewable energy credits)**: 77%



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**Note:** Percent renewable energy was 100% when the emissions from this period were originally verified. This updated verification opinion includes emissions from acquired facilities that were not included in the original verification, and for which renewable energy was not available, resulting in a decrease in percentage renewable energy.

- **Scope 1 + Scope 2 (Market-Based) + Scope 3 Business Travel + Scope 3 Employee Commuting** = 10,064 metric tons of CO<sub>2</sub> equivalent
- **GHG Emissions Offsets Retired for 2020:** 5,967 metric tons of CO<sub>2</sub> equivalent

**Note:** The noted quantity of retired offsets was sufficient to achieve carbon neutrality for 2020 Scope 1, Scope 2 (Market-Based), Scope 3 Business Travel, and Scope 3 Employee Commuting emissions, based on Moody's originally verified 2020 emissions, prior to the addition of emissions associated with acquisitions which are included in this updated verification opinion.

Data and information supporting the Scope 1, Scope 2, and Scope 3 GHG emissions assertion were historical in nature for the most part. In some cases, data were estimated rather than historical in nature.

### Period covered by GHG emissions verification:

- January 1, 2020 to December 31, 2020

### Criteria against which verification conducted:

- World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) Greenhouse Gas Protocol, Corporate Accounting and Reporting Standard
- WRI/WBCSD Corporate Value Chain (Scope 3) Accounting and Reporting Standard

### Reference Standard:

- ISO 14064-3 Second Edition 2019-04: Greenhouse gases – Part 3: Specification with guidance for the verification and validation of greenhouse gas statements

### Level of Assurance and Qualifications:

- Limited
- This verification used a materiality threshold of +/-5% for aggregate errors in sampled data for each of the above indicators.

### GHG Verification Methodology:

Evidence-gathering procedures included but were not limited to:

- Interviews with relevant personnel of Moody's;
- Review of documentary evidence produced by Moody's;
- Review of Moody's data and information systems and methodology for collection, aggregation, analysis and review of information used to determine GHG emissions; and
- Audit of sample of data used by Moody's to determine GHG emissions.

### Verification Opinion:

Based on the process and procedures conducted, there is no evidence that the GHG emissions statement shown above:

- is not materially correct and is not a fair representation of the GHG emissions data and information; and



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- has not been prepared in accordance with the WRI/WBCSD GHG Protocol Corporate Accounting and Reporting Standard (Scope 1 and 2), and WRI/WBCSD Greenhouse Gas Protocol Corporate Value Chain Accounting and Reporting Standard (Scope 3).

It is our opinion that Moody's has established appropriate systems for the collection, aggregation and analysis of quantitative data for determination of these GHG emissions for the stated period and boundaries.

### Statement of independence, impartiality and competence

Apex is an independent professional services company that specializes in Health, Safety, Social and Environmental management services including assurance with over 30 years history in providing these services.

No member of the verification team has a business relationship with Moody's, its Directors or Managers beyond that required of this assignment. We conducted this verification independently and to our knowledge there has been no conflict of interest.

Apex has implemented a Code of Ethics across the business to maintain high ethical standards among staff in their day-to-day business activities.

The verification team has extensive experience in conducting assurance over environmental, social, ethical and health and safety information, systems and processes, has over 20 years combined experience in this field and an excellent understanding of Apex's standard methodology for the verification of greenhouse gas emissions data.

*Mary E. Armstrong-Fiberg*

Mary E. Armstrong-Fiberg, Lead Verifier  
Principal Consultant  
APEX Companies, LLC  
Cleveland, Ohio

December 9, 2021

*Trevor A. Donaghi*

Trevor A. Donaghi, Technical Reviewer  
Program Manager  
APEX Companies, LLC  
Pleasant Hill, California

This verification statement, including the opinion expressed herein, is provided to Moody's Corporation and is solely for the benefit of Moody's Corporation in accordance with the terms of our agreement. We consent to the release of this statement by you to CDP in order to satisfy the terms of CDP disclosure requirements but without accepting or assuming any responsibility or liability on our part to CDP or to any other party who may have access to this statement.

# ASSURANCE STATEMENT 2019



## VERIFICATION OPINION GREENHOUSE GAS EMISSIONS

To: Moody's Corporation

APEX Companies LLC, (Apex) was engaged to conduct an independent verification of the greenhouse gas (GHG) emissions reported by Moody's Corporation (Moody's) for the period stated below. This Verification Opinion applies to the related information included within the scope of work described below.

The determination of the GHG emissions is the sole responsibility of Moody's. Moody's is responsible for the preparation and fair presentation of the GHG emissions statement in accordance with the criteria. Apex's sole responsibility was to provide independent verification opinion on the accuracy of the GHG emissions reported, and on the underlying systems and processes used to collect, analyze and review the information. Apex is responsible for expressing an opinion on the GHG statement based on the verification. Verification activities applied in a limited level of assurance verification are less extensive in nature, timing and extent than in a reasonable level of assurance verification.

**Boundaries of the reporting company GHG emissions covered by the verification:**

- Financial Control
- Worldwide

**Types of GHGs:** CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, HFCs, CFCs, HCFCs

**GHG Emissions Statement:**

- **Scope 1:** 1,744 metric tons of CO<sub>2</sub> equivalent
- **Scope 2 (Location-Based):** 14,035 metric tons of CO<sub>2</sub> equivalent
- **Scope 2 (Market-Based):** 13,591 metric tons of CO<sub>2</sub> equivalent
- **Scope 3:**
  - Purchased Goods and Services: 123,000 metric tons of CO<sub>2</sub> equivalent
  - Capital Goods: 4,700 metric tons of CO<sub>2</sub> equivalent
  - Fuel and Energy Related Activities: 4,600 metric tons of CO<sub>2</sub> equivalent
  - Waste Generated in Operations: 460 metric tons of CO<sub>2</sub> equivalent
  - Business Travel: 23,100 metric tons of CO<sub>2</sub> equivalent
  - Employee Commuting: 10,400 metric tons of CO<sub>2</sub> equivalent
  - Investments: 6,100 metric tons of CO<sub>2</sub> equivalent
- **Supplier Spend with Science-Based Target:** 25%
- **Energy Use (electricity):** 36,477 megawatt hours
- **Scope 1 + Scope 2 (Market-Based) + Scope 3 Business Travel + Scope 3 Employee Commuting =** 48,835 metric tons of CO<sub>2</sub> equivalent
- **GHG Emissions Offsets Retired for 2000 through 2019:** 365,103 metric tons of CO<sub>2</sub> equivalent

*Note: The noted quantity of retired offsets was sufficient to achieve carbon neutrality for estimated historical Scope 1, Scope 2 (Market-Based), Scope 3 Business Travel, and Scope 3 Employee Commuting emissions.*



*based on Moody's originally verified 2019 emissions, prior to the addition of the emissions associated with acquisitions which are included in this updated verification opinion.*

Data and information supporting the Scope 1, Scope 2, and Scope 3 GHG emissions assertion were historical in nature for the most part. In some cases, data were estimated rather than historical in nature.

**Period covered by GHG emissions verification:**

- January 1, 2019 to December 31, 2019

**Criteria against which verification conducted:**

- World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) Greenhouse Gas Protocol, Corporate Accounting and Reporting Standard
- WRI/WBCSD Corporate Value Chain (Scope 3) Accounting and Reporting Standard

**Reference Standard:**

- ISO 14064-3 Second Edition (2019-04): Greenhouse gases – Part 3: Specification with guidance for the validation and verification of greenhouse gas statements

**Level of Assurance and Qualifications:**

- Limited
- This verification used a materiality threshold of 5% for aggregate errors in sampled data for each of the above indicators.
- Global Warming Potentials used to calculate refrigerant emissions were not consistent with those used for the remainder of the inventory.

**GHG Verification Methodology:**

Evidence-gathering procedures included but were not limited to:

- Interviews with relevant personnel of Moody's and their consultant;
- Review of documentary evidence produced by Moody's;
- Review of Moody's data and information systems and methodology for collection, aggregation, analysis and review of information used to determine GHG emissions; and
- Audit of sample of data used by Moody's to determine GHG emissions.

**Verification Opinion:**

Based on the process and procedures conducted, there is no evidence that the GHG emissions statement shown above:

- is not materially correct and is not a fair representation of the GHG emissions data and information; and
- has not been prepared in accordance with the WRI/WBCSD GHG Protocol Corporate Accounting and Reporting Standard (Scope 1 and 2), and WRI/WBCSD Greenhouse Gas Protocol Corporate Value Chain Accounting and Reporting Standard (Scope 3).

It is our opinion that Moody's has established appropriate systems for the collection, aggregation and analysis of quantitative data for determination of these GHG emissions for the stated period and boundaries.



**Statement of independence, impartiality and competence**

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The verification team has extensive experience in conducting assurance over environmental, social, ethical and health and safety information, systems and processes, has over 20 years combined experience in this field and an excellent understanding of Apex's standard methodology for the verification of greenhouse gas emissions data.

**Attestation:**

Trevor A. Donoghue, Lead Verifier  
Program Manager  
APEX Companies, LLC  
Pleasant Hill, California

December 9, 2021

David Reilly, Technical Reviewer  
Principal Consultant  
APEX Companies, LLC  
Santa Ana, California

*This verification statement, including the opinion expressed herein, is provided to Moody's Corporation and is solely for the benefit of Moody's Corporation in accordance with the terms of our agreement. We consent to the release of this statement by you to CDP in order to satisfy the terms of CDP disclosure requirements but without accepting or assuming any responsibility or liability on our part to CDP or to any other party who may have access to this statement.*