



2022  
TCFD Report

MOODY'S



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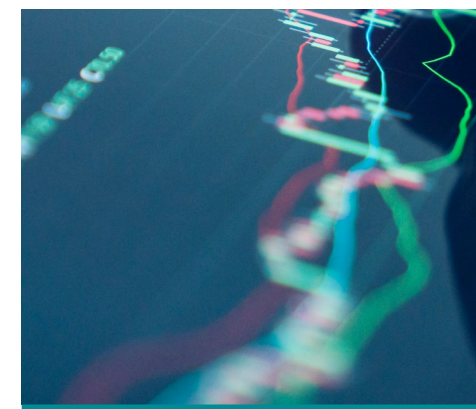
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# A Message from Mark Kaye, Moody's Chief Financial Officer and Christine Elliott, Chief Corporate Affairs Officer

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Climate change is among the most important sources of emerging risk — and opportunity — in today's financial landscape. As such, corporate efforts to adjust to the economic reality and impact of climate change are set to become a key element of generational risk management. As a global integrated risk assessment firm, Moody's is proactively addressing this challenge by embedding climate considerations into both our corporate practices and the climate-related risk assessments and solutions we offer market participants.

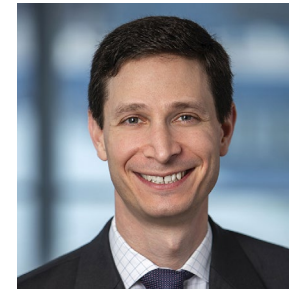
We have made important strides to advance our [Decarbonization Plan](#) and reach our corporate goal of net-zero emissions across our operations and value chain by 2040. We were one of the first companies to have our near- and long-term net-zero targets validated by the Science Based Targets initiative. In partnership with the Glasgow Financial Alliance for net-zero (GFANZ), we joined the Climate Data Steering Committee, collaborating with world leaders and fellow financial service providers to advise on the creation and design of a public open-data platform to help standardize private sector climate data. And for the first time, as we are a member of the Taskforce on Nature-related Financial Disclosures (TNFD), we've included in this report a position statement on Moody's impact on the natural environment.

As our customers' demands have evolved to measure, monitor and manage a wider range of interconnected risks, we have enhanced our climate capabilities to help quantify

the impacts of climate change. This includes the expansion of Moody's Temperature Alignment Data and ESG Score Predictor to cover scope 3 emissions, as well as the release of a significantly enhanced sea-level-rise risk scoring methodology that captures nuanced variations in coastal flooding potential. Following Moody's 2021 acquisition of RMS, we strengthened elements of our physical climate risk models and integrated several other capabilities into Moody's comprehensive portfolio of climate solutions.

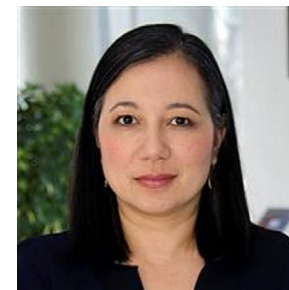
We have been honored to receive industry recognition for our leading sustainability efforts this year. Our Company was named to CDP's Climate Change "A" List for the third consecutive year for demonstrating our leadership in cutting our own carbon emissions and mitigating climate risks. We also received the net-zero Transition award at the 2022 Reuters Responsible Business Awards for our decarbonization commitments across our operations and value chain.

In our fifth report, we reaffirm our commitment to aligning our climate disclosures with the recommendations set out by the Task Force on Climate-related Financial Disclosures (TCFD). Moving forward, we remain focused on data standardization and transparency, as well as on the continued advancement of our corporate science-based targets, while providing our customers with trusted insights and tools to analyze climate risks. Through our collective efforts, we will help to build a more resilient future.



**MARK KAYE**

Chief Financial Officer, Moody's Corporation



**CHRISTINE ELLIOTT**

Chief Corporate Affairs Officer, Moody's Corporation





# About TCFD

The Task Force on Climate-related Financial Disclosure (TCFD) recommendations are designed to promote more informed investment, credit and insurance underwriting decisions and 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 through effective climate-related reporting.

Since its inception in 2015, the TCFD framework has moved from being entirely voluntary to mandatory in certain jurisdictions. Countries such as the U.K. and Singapore already require TCFD-aligned reporting. Other markets, including the EU, Canada and the U.S. are targeting such mandates in the short- to medium-term. The steady increase in legislation is intended to improve transparency on climate-related matters in corporate reporting. Moody's expects to see this trend continue and for TCFD reports to eventually become part of business-as-usual reporting.

The TCFD disclosure elements are structured around four thematic areas: 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.

Adopting the TCFD framework helps promote climate resiliency and supports identifying and assessing 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 business risks. Moody's believes that greater transparency, informed decisions and fair access to information open the door to shared progress.

Addressing climate-related risk is crucial for global economies to move toward sustainable outcomes. Moody's strives to achieve best practice in transparency by adhering to the TCFD framework. This publication is Moody's fifth annual TCFD Report, which builds on the commitments and initiatives set out in Moody's [2021 TCFD Report](#) and emphasizes the Company's role in building resilient financial markets.

Similar to Moody's previous TCFD Reports, forward-looking statements are applied to reflect current expectations and assumptions given the best available research and modeling as of the date of this report. These statements may differ over time due to the complexity of variables and outcomes contributing to Moody's future emissions scenarios.

As an industry leader in sustainability, Moody's is dedicated to accelerating market transformation to create more inclusive, sustainable economies. The Vice Chairman of Moody's Investor Service (MIS) currently serves as a member of the TCFD Taskforce to aid in this market transformation, providing insight as to what might constitute "decision-useful" disclosures for investors and sharing Moody's own experience developing TCFD disclosures. Additionally, Moody's AI data tool mlfabric™ contributed to the development of the Financial Stability Board's [2022 TCFD Status Report](#).



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**GOVERNANCE:**

- » Moody's participation in GFANZ signals the Company's commitment to align all relevant products and services to achieve net-zero greenhouse gas (GHG) emissions.
- » Increased alignment of executive compensation with sustainability metrics, thereby incentivizing leaders to prioritize and advance sustainability initiatives.

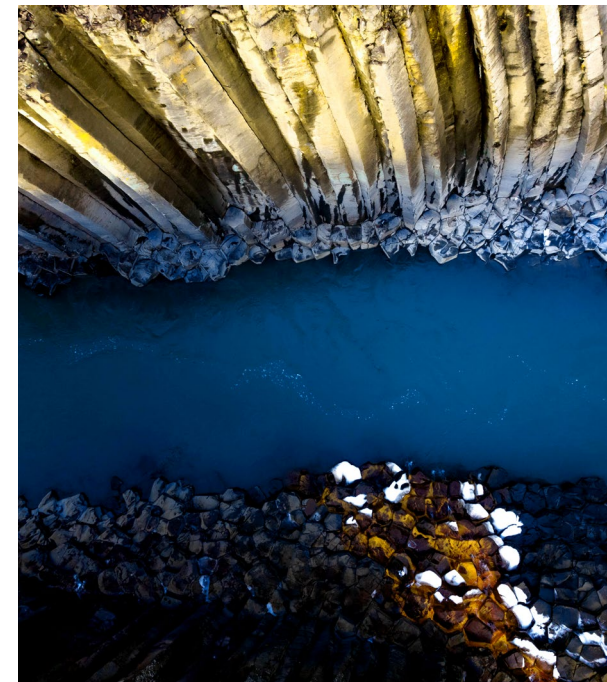


**STRATEGY:**

- » Achievement of the CDP A-List for the third consecutive year, and the Company being showcased in CDP's [Stories of Change](#) publication.
- » Renewal of Moody's nonfinancial materiality assessment to identify topics most relevant to internal and external stakeholders, as well as Moody's continued business success.
- » Integration of enhanced climate capabilities in several of Moody's flagship solutions, including enhanced Moody's RMS modeling of physical risk hazards and the quantification of financial impact associated with climate catastrophes.
- » Participation in the Climate Data Steering Committee to help make climate transition-related data openly available in a single place for the first time.
- » An advanced physical risk analysis, which quantifies climate-related financial impacts associated with climate catastrophes for global offices, data centers and remote work using the latest modeling from Moody's RMS.
- » An expanded critical supplier climate risk analysis, both in terms of coverage and the risk criteria assessed.
- » Enhancement of Moody's climate-adjusted probability of default analysis to evaluate the financial impacts of respective physical and transition risks under different climate scenarios.

**RISK MANAGEMENT:**

- » Expansion of Moody's disclosure on the Company's climate risk identification and management process for enhanced transparency.
- » Guidance provided to employees via Moody's business resilience planning for any issues that may impact ability to work remotely, such as physical climate risk.



**METRICS & TARGETS:**

- » Progress on Moody's science-based targets, including:

<b>92%</b>	reduction of Scope 1 and Scope 2 emissions from 2019 base year (50% target by 2030)
<b>68%</b>	reduction of Scope 3 business travel, employee commuting and fuel- and energy-related activities emissions from 2019 base year (15% target by 2025)
<b>49%</b>	of supplier spend covered by science-based targets (60% target by 2025)
<b>100%</b>	of continued renewable electricity sourcing for Moody's global operations, and ongoing offsetting for remaining operational emissions



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The past year has seen considerable advancements in Moody's sustainability and Environmental, Social and Governance (ESG) initiatives.

Moody's has implemented changes to its executive compensation criteria to better promote the advancement of sustainability-linked Strategic and Operational (S&O) metrics. This demonstrates the Company's commitment to integrating sustainability into every aspect of its operations and value chain, including governance and decision-making at the executive level.

Moody's refreshed and enhanced its climate risk scenario analyses, demonstrating once again that physical and transition climate risks are not expected to have a material impact on Moody's business. The results from this year's climate-adjusted probability of default analysis reveals that Moody's credit risk remains under 1% across all assessed climate scenarios. Moody's physical risk analysis suggests that even in a high-emission future, less than 0.1% of Moody's asset value is at risk from climate hazards. Moody's transition risk analysis reveals that carbon pricing risks remain well below Moody's financial materiality threshold as the gross annual cost of carbon pricing and renewable electricity procurement never exceeded Moody's materiality threshold of generally 5% of EBIT. Collectively, these models paint a picture of a Company for which climate risks are effectively managed and mitigated, and for which climate opportunities are significant.

The Company has continued with its ongoing efforts and commitments to incorporate sustainability and ESG considerations across its products and services. Moody's expanded ESG capabilities are expected to continue to drive value for both the Company and its customers. This expansion and continued growth support capital market needs for actionable and transparent data and insights.

Moody's has also made significant strides on the Company's [Decarbonization Plan](#) and is on course to reach its science-based targets. In order for the Company's climate strategy to remain aligned with stakeholder expectations, Moody's refreshed its non-financial materiality assessment, and continues to advance the dialogue on sustainable finance through participation in prominent global climate initiatives and industry working groups.

The following report comprehensively examines Moody's strategies, capabilities and advancements, showcasing the Company's dedication to modeling proactive corporate responsibility and demonstrating best practices.





# Board's Oversight of Climate-related Risks and Opportunities

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Moody's Board of Directors is responsible for the oversight of the Company's long-term success and, by extension, the management of and strategy for ESG-related risks and opportunities. The Board reviews the Company's long-term strategic plan annually, which among other things, includes the Company's approach to climate-related concerns.

The Board's oversight of Moody's salient climate-related risk includes business continuity disruption and reputational or credibility concerns stemming from the incorporation of climate-related risks into Moody's products and services. This has included the review and approval of Moody's [Environmental Sustainability Policy](#) and [Decarbonization Plan](#), both of which reflect Moody's effort to minimize the impact of the Company's operations and services on the environment. The Board also approved Moody's participation in GFANZ, supporting the Company's commitment to align all relevant products and services to achieve net-zero GHG emissions.

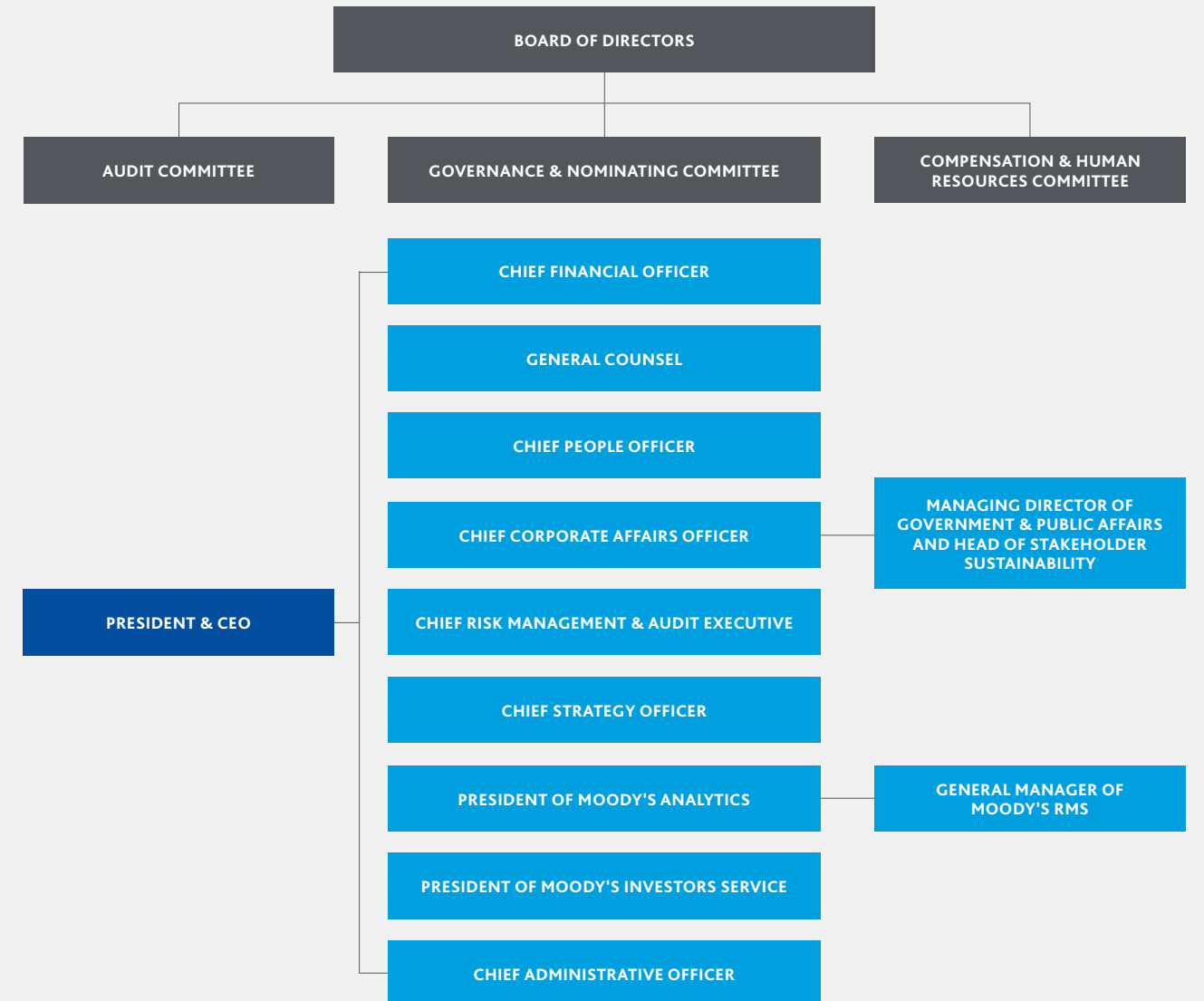
Moody's Board is composed of individuals with a wide range of experience in risk management and ESG topics. Leslie F. Seidman, who has been a member of the Board since 2013, is certified in ESG oversight. The Board continues to enhance its collective knowledge of sustainability topics through ongoing education, such as regular presentations from management on various ESG issues, including climate and the integration of ESG factors into Moody's products and solutions. The Chief Executive Officer (CEO) regularly updates the Board on the Company's progress with respect to the six focus areas of Moody's S&O metrics, which includes the advancement of corporate sustainability.

The Board is assisted by three committees that inform the Company's approach to ESG issues:

- » **Audit Committee:** Oversees financial, risk, accounting and other disclosures made in Moody's annual and quarterly reports related to sustainability and supports the Board in its duties related to the oversight of risk assessment and risk management processes.
- » **Governance & Nominating Committee:** Oversees sustainability matters related to the business and to long-term value creation and makes recommendations to the Board regarding these issues.
- » **Compensation & Human Resources Committee:** Reviews introduction of sustainability-related performance goals for determining compensation of all senior executives.

Board members served on multiple committees in 2022. For more information on the Board and its committees, see [Moody's 2023 Proxy Statement](#).

Figure 1: Climate governance organizational chart



# Management's Role in Assessing and Managing Climate-related Risks and Opportunities

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Climate-related issues are integrated into Moody's business strategy and mission of empowering organizations to make better decisions. In addition to the Board's oversight and Committees, the Company has created a governance structure around Moody's corporate sustainability strategy and its implementation creates opportunities for innovative collaboration. The Executive Leadership Team (ELT), which is composed of the CEO and their direct reports, serves as the primary decision-making body for key strategic sustainability efforts, with oversight from the Board of Directors. Responsibilities related to climate are assigned at the most senior levels of the Company and with input from employees at all levels.

## EMBEDDING CLIMATE AND SUSTAINABILITY METRICS INTO EXECUTIVE COMPENSATION

Moody's executive leadership is held accountable for the achievement of its sustainability goals. In 2020, the management team introduced sustainability-related performance metrics for determining compensation of certain senior executives, including the CFO. The CFO's pay has been tied to the advancement of the Company's sustainability programs for several years; metrics of success are related to 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 being 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 preexisting sustainability targets, including emissions reductions targets. In 2022, sustainability became one of the core S&O focus areas for all eligible employees. On average, one-third of executive variable compensation is tied to nonfinancial performance metrics, wherein climate performance features prominently.

Remuneration policies for our highest governance body and senior executives can be found in our [2023 Proxy Statement](#), p. 23-27, 47-71.

Table 1: Climate governance leadership

<b>CROSS-FUNCTIONAL ENVIRONMENTAL WORKING GROUPS</b>	Executive Leadership Team	<ul style="list-style-type: none"> <li>» Comprises the CEO and their direct reports, overseen by the three Committees of the Board of Directors.</li> <li>» Serves as the decision-making body for key strategic sustainability efforts.</li> </ul>
	Stakeholder Sustainability Group	<ul style="list-style-type: none"> <li>» Evaluates Moody's progress on sustainability issues across its business functions and generates sustainability recommendations.</li> <li>» The Vice President of Stakeholder Sustainability oversees the design and implementation of Moody's corporate and climate sustainability, reporting to the Managing Director of GPRA, and Head of Stakeholder Sustainability.</li> </ul>
<b>EXECUTIVE LEADERSHIP</b>	President and Chief Executive Officer (CEO)	<ul style="list-style-type: none"> <li>» Oversees management's climate assessment and mitigation of material climate risks and opportunities.</li> <li>» The CEO also serves on and reports to the Board on climate-related issues on a quarterly basis.</li> </ul>
	Chief Risk Management & Audit Executive	<ul style="list-style-type: none"> <li>» Responsible for climate risk management across Moody's.</li> <li>» Manages the Enterprise Risk Management (ERM) function, responsible for identifying and monitoring existing and emerging risks.</li> </ul>
	Managing Director of Government & Public Affairs (GPRA) and Head of Stakeholder Sustainability	<ul style="list-style-type: none"> <li>» Responsible for monitoring current and emerging climate-related laws and regulations and their implications for Moody's business.</li> <li>» Leads dialogue with key internal and external stakeholders on Moody's value proposition.</li> <li>» Oversees Moody's Stakeholder Sustainability Group, with managerial oversight for Moody's Stakeholder Sustainability activities.</li> </ul>
	Chief Finance Officer (CFO)	<ul style="list-style-type: none"> <li>» Oversees Moody's finance function and works to embed sustainability and ESG into business-as-usual financial processes, Companywide operations, and products and solutions.</li> </ul>
	Managing Director of Finance Operations and Enablement	<ul style="list-style-type: none"> <li>» Oversees Moody's supply chain and engages suppliers on climate action as set forth in Moody's science-based targets (see Metrics and Targets for more information).</li> </ul>
	Chief People Officer (CPO)	<ul style="list-style-type: none"> <li>» Oversees the execution of the Company's strategy to attract, grow and retain talent in service of the business, and identifies opportunities in employee engagement and development that align with the Company's sustainability mission, such as PurposeFirst, initiative designed to enhance employee work flexibility.</li> </ul>
	Chief Administrative Officer (CAO)	<ul style="list-style-type: none"> <li>» Oversees strategic and operational initiatives, including the company's global enterprise technology team, and identifies opportunities in Moody's digital capabilities and IT infrastructure that align with the Company's Decarbonization Plan, such as home office technology.</li> </ul>
	President of Moody's Analytics (MA)	<ul style="list-style-type: none"> <li>» Oversees Moody's Climate offerings, including Moody's RMS, and identifies opportunities in Moody's business that align with the Company's sustainability mission.</li> </ul>
President of Moody's Investors Service (MIS)	<ul style="list-style-type: none"> <li>» Oversees the incorporation of ESG and climate considerations into credit analysis and credit ratings, and identifies opportunities in Moody's business that align with the Company's sustainability mission.</li> </ul>	



# Climate-related Risks, Opportunities and Time Horizons

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This report details climate-related risks and opportunities relevant to Moody's across three timeframes: short-term (up to 2025), medium-term (up to 2030) and long-term (up to 2040). The short- and medium-term time horizons are aligned with Moody's near-term science-based targets and the Company's financial and operational planning timelines. The long-term horizon mirrors Moody's commitment to achieving net-zero by 2040.

Risks and opportunities are evaluated against the Company's financial materiality threshold. This is generally defined as a change of more than 5% of Moody's earnings before interest and tax (EBIT) or where there is a significant impact on the Company's financial sustainability.

As outlined in Table 2, several climate-related opportunities remain significant for Moody's both now and in the future. Moody's sustainability strategy, tailored and adapted over the years, is designed to recognize and generate climate-related opportunities while simultaneously mitigating risks. As a result, Moody's has not incurred or identified any climate risks that are considered significant or that exceed Moody's financial materiality threshold (see Scenario Analysis Results Summary section on [p. 15](#) for further details).

Table 2: Climate-related opportunities

■ Low impact  
 ■ Medium impact  
 ■ High impact

OPPORTUNITY	FINANCIAL DRIVER	IMPACT LEVEL			STRATEGY TO HARNESS OPPORTUNITY
		Short-term	Medium-term	Long-term	
<b>Access to new markets</b>	Increased revenue through access to new and emerging markets	Medium	Medium	High	<p>The growing importance of ESG and climate considerations across markets provides Moody's with a unique opportunity. Moody's domain expertise and solutions across the Company can assist customers in identifying and quantifying ESG risks and opportunities across the distinct views of risk faced by clients.</p> <p>Moody's Climate capabilities have expanded through strategic ESG and climate-related investments. These investments form new revenue streams and enable the Company to expand its Climate Solutions suite and refine the Company's existing products and services.</p> <p>In recent years, Moody's has harnessed this opportunity through critical investments, such as Moody's RMS. These enabled Moody's to become a leading global provider of climate and natural disaster risk modeling and analytics, specialized ESG research and decision-making tools, and physical climate data and intelligence.</p>
<b>Development of new products and services through R&amp;D and innovation</b>	Increased revenue resulting from heightened demand for products and services	Medium	Medium	High	<p>Moody's unique combination of trusted data, insights and analytical capabilities strongly position the Company to meet the growing demand for climate and ESG capabilities. This demand is only expected to increase with the emergence of voluntary disclosure frameworks on nonfinancial risks, including TCFD, as well as anticipated regulatory mandates on the disclosure of climate risks. Taking an integrated risk assessment approach, Moody's ESG and climate expertise is embedded across the organization to facilitate integration across Moody's suite of solutions.</p> <p>Climate is integrated across a wide array of Moody's solutions (see Tables 3 and 4). The success of these ESG-linked capabilities has contributed to the growth in ESG revenues experienced in recent years and fuels expectations of continued future growth.</p>
<b>Memberships and climate change commitments</b>	Increased revenue through access to new and emerging markets	Medium	Medium	Medium	<p>Moody's maintains memberships in numerous climate-related initiatives and industry working groups. This network allows the Company to attain and contribute to market insights that facilitate the ongoing development of the Company's ESG and climate-related risk products and solutions, which in turn provides Moody's with access to new and emerging markets. Additional benefits include opportunities to solidify Moody's brand reputation as a leader in corporate climate action and sustainable business practices and to advance sustainability within the Company.</p> <p>Moody's memberships include the United Nations Principles for Responsible Investment, GFANZ, TCFD and TNFD. Through Moody's actions, commitments and memberships with trade associations, the Company has an opportunity to inspire good corporate practices that drive systemic change and advance dialogue on sustainable finance and climate implications.</p>



## PARTNERING FOR CLIMATE IMPACT

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**CDP (formerly known as Carbon Disclosure Project).** In 2022, Moody's received an "A" score from CDP on climate action for the third consecutive year and was featured in CDP's [2022 Stories of Change](#) for its efforts to reach net-zero by 2040. The score recognizes the Company as one of a small number of high-performing companies out of nearly 15,000 that are leading actions to cut emissions, mitigate climate risks and develop the low-carbon economy.



**Climate Data Steering Committee.** The Climate Data Steering Committee was created by the French President Emmanuel Macron and UN Special Envoy for Climate Ambition and Solutions Michael R. Bloomberg. Moody's collaborated with its peers on the committee to publish recommendations on the design of a [new open-data utility](#) that would make climate transition-related data freely available in a single place for the first time.



**Science Based Targets initiative (SBTi).** In 2022, Moody's became one of the first companies to have its near- and long-term net-zero emissions targets validated by the SBTi. Moody's was featured in a case study describing the Company's path to net-zero and explaining how it involves its value chain in this journey. In addition, the Vice Chairman of MIS joined the SBTi's Financial Net-Zero Expert Advisory Group, which is guiding the development of the first science-based global standard for financial sector net-zero targets.



**Task Force on Climate-related Financial Disclosures (TCFD).** Moody's was one of the first financial firms to endorse and report based on recommendations from the TCFD, and its Chief Credit Officer has supported the development of these decision-useful recommendations for investors as a TCFD Task Force Member since 2016.



**Glasgow Financial Alliance for net-zero (GFANZ).** As part of GFANZ, Moody's is a founding member of the net-zero Financial Services Provider Alliance, a global group of 27 financial service providers committed to supporting the goal of global net-zero GHG emissions by 2050 or sooner. Moody's is committed to aligning its relevant products and services to this goal, in addition to reducing its own operational emissions. As part of GFANZ workstream, Moody's contributes to recommendations and guidance for financial institutions' transition planning and the implementation of net-zero commitments. The Company was featured in a case study for GFANZ draft report [Measuring Portfolio Alignment](#), which provides guidance on measuring how investment, lending and underwriting activities align with the goals of the Paris Agreement and critical 2050 global net-zero objectives. The Company was also featured in GFANZ report [Recommendations and Guidance on Financial Institutions Net-zero Transition Plans](#), which provides financial institutions with potential strategies for meeting net-zero commitments.



**Taskforce on Nature-related Financial Disclosures (TNFD).** Moody's is a member of TNFD, a new industry-led initiative working to significantly shift global financial flows from nature-negative to nature-positive outcomes. The Company contributes its expertise to help define how nature-related risks should be measured, which also allows it to inform its customers about their exposure to these risks and how to manage them. In addition, Moody's 2022 TCFD Report includes a position statement on the Company's impacts on the natural environment.



**United Nations Global Compact.** Moody's is a signatory of the U.N. Global Compact's coalition for the Sustainable Development Goals (SDGs), affirming its commitment to the CFO Principles on Integrated SDG Investments and Finance. The Company supports the U.N. Global Compact's Climate Ambition Accelerator, which helps companies learn how to set science-based targets and use learning and networking opportunities to advance their sustainability ambitions. In 2022, Moody's became a sponsor of the U.N. Global Compact Climate Portfolio, supporting Uniting Business Live and the U.N. Global Compact's Leaders' Summit. In addition, Moody's CFO spoke at the Leaders' Summit discussing the risks and opportunities companies and their investors can assess and manage as the world transitions to net-zero. As a signatory to U.N. Global Compact Business Ambition for 1.5°C, Moody's affirms its support annually for Principle 7: "Businesses should support a precautionary approach to environmental challenges."

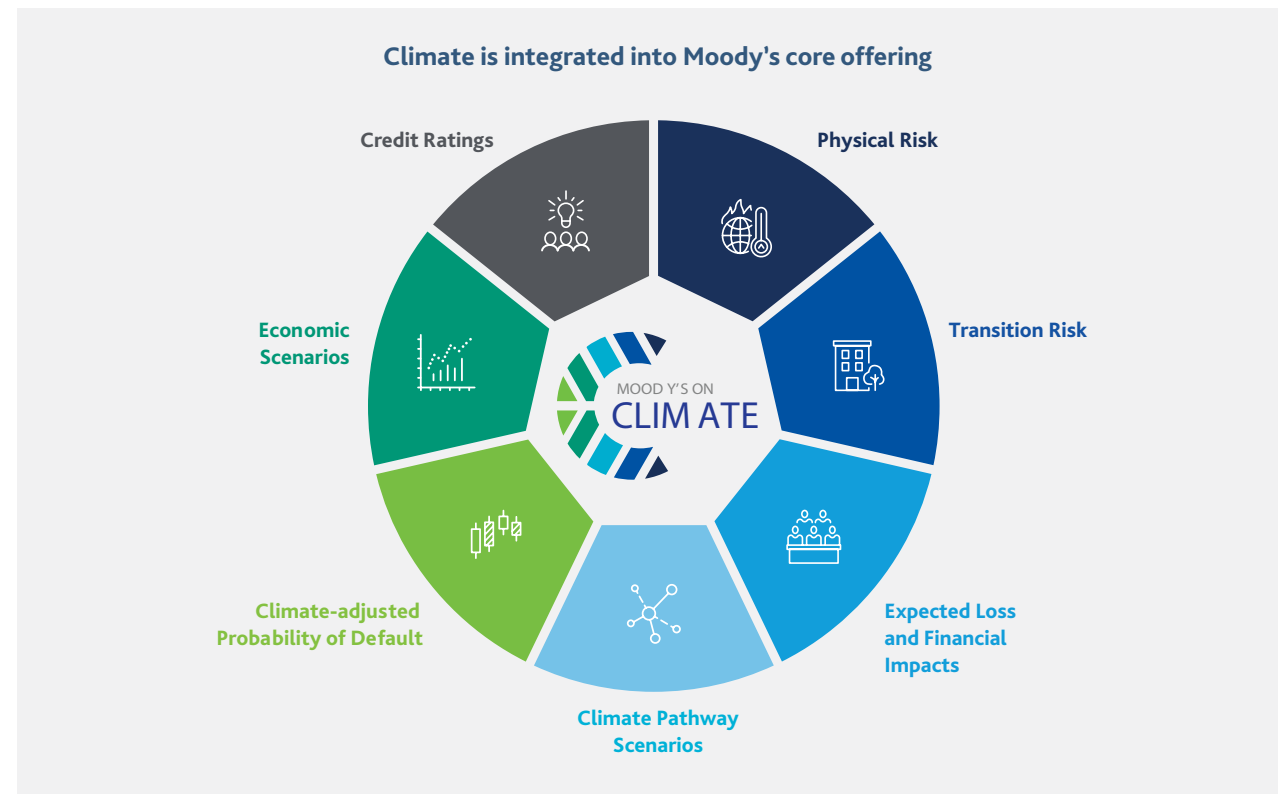
## ESG AND CLIMATE CAPABILITIES

In 2022, Moody's observed continued rising demand for ESG and climate data, insights and analytics. Sustainable finance and ESG markets have grown, and investors, banks, insurers and other corporations are increasingly tasked with identifying, quantifying and managing their climate-related risks. This momentum has significantly shaped the products and services that Moody's offers its customers and, as in previous years, has and will play a central role in empowering transparent and efficient capital markets.

Moody's ESG capabilities help capital market participants measure, monitor and manage interconnected risks. Over the past four years, ESG has been a strategic growth driver for the Company. In 2022, ESG and Climate revenue reached approximately \$190 million.<sup>1</sup> Moody's expects that ESG will continue to drive value for the Company as market demand for data, analytics and insights on climate risk and sustainable finance grow globally.

Moody's climate and ESG capabilities continued to expand in 2022, as outlined in Table 4. Moody's ESG and Climate capabilities span every major asset class and industry and are powered by rigorous analysis and transparent methodologies.

Figure 2: Moody's on climate



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

<sup>1</sup> Approximate ESG and Climate revenue from Moody's Investors Service and Moody's Analytics as of December 31, 2022.

Table 3: ESG and Climate capabilities

KEY THEME	MOODY'S CAPABILITIES
<b>Climate Risk</b>	<p>Climate risk identification:</p> <ul style="list-style-type: none"> <li>» Physical risk: Forward-looking data capturing exposure to climate hazards for:                             <ul style="list-style-type: none"> <li>– Thousands of listed companies with global corporate facilities;</li> <li>– Millions of U.S. commercial real estate properties; and</li> <li>– Global sovereigns and sub-sovereigns.</li> </ul> </li> <li>» Transition risk data and analytics:                             <ul style="list-style-type: none"> <li>– Carbon footprint data calculating a company's Scope 1, 2 and 3 emissions, leveraging company disclosures and Moody's proprietary estimation model that covers large-cap companies and small- and medium-sized enterprises;</li> <li>– Screening datasets that identify company involvement in fossil fuels and renewable energy activities and/or investments; and</li> <li>– Temperature Alignment Data that provides a forward-looking view of a company's decarbonization targets and carbon emission trajectories against recognized benchmarks.</li> </ul> </li> </ul> <p>Climate risk quantification:</p> <ul style="list-style-type: none"> <li>» Climate-adjusted Expected Default Frequency (EDF) that determines the probability of default for companies, powered by Moody's award-winning EDF model and covering physical and transition risk drivers.</li> <li>» Climate Risk Scenarios, assessing macroeconomic drivers across a range of Network for Greening the Financial System (NGFS) climate scenarios.</li> <li>» Carbon Transition Assessments, which provide a consistent and verifiable means to analyze carbon transition risk for rated nonfinancial companies.</li> <li>» Global Climate Models for a wide range of climate hazards.</li> </ul>
<b>ESG</b>	<ul style="list-style-type: none"> <li>» MIS Issuer Profile Scores (IPS), assessing an entity's exposure to credit-relevant ESG risks and benefits.</li> <li>» MIS ESG Credit Impact Scores (CIS), an output of the rating process that indicates the extent, if any, to which ESG factors impact the rating of an issuer or transaction.</li> <li>» ESG scores and data for global public and private entities from a double materiality lens.</li> <li>» Alignment screening capabilities covering normative standards such as the U.N. Global Compact and U.N. SDG frameworks as well as business activity involvement and sustainable goods and services to inform asset stewardship, portfolio management and construction of labeled funds or indices.</li> <li>» ESG risk monitoring and alerts assessing a company's exposure to and management of various related incidents.</li> <li>» Regulatory solutions comprised of rigorous and transparent datasets to support TCFD, Sustainable Finance Disclosure Regulation (SFDR) reporting, EU Taxonomy alignment screening and Pillar 3 reporting.</li> <li>» Research and content providing fundamental analysis on ESG and Climate topics across entities, sectors, sovereigns and sub-sovereigns.</li> </ul>
<b>Sustainable Finance</b>	<ul style="list-style-type: none"> <li>» Second Party Opinions (SPOs) of labeled green, social, sustainability and sustainability-linked debt issuances for issuers and borrowers, provided by MIS.</li> </ul>

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**Table 4: Key climate-related product and service expansions in 2022**

NEW PRODUCT LAUNCHES	PRODUCT EXPANSIONS	MARKET ENGAGEMENT
<ul style="list-style-type: none"> <li>» Moody's new <a href="#">ESG Insurance Underwriting Solution</a> integrates indicators and scores to help commercial property and casualty insurers operationalize ESG risk assessment in their insurance underwriting workflows.</li> <li>» <a href="#">ESGView</a>, Moody's new ESG data and insight application, provides integrated perspectives on ESG risks and opportunities.</li> <li>» <a href="#">Climate On Demand Pro (CoD Pro)</a>, a new tool launched by Moody's in 2023, allows users to project the financial impacts of their assets' and portfolios' exposure to physical climate risk from a wide range of potential hazards. This tool was utilized to perform Moody's internal 2022 physical climate risk analysis.</li> </ul>	<ul style="list-style-type: none"> <li>» Expanded <a href="#">MIS' Issuer Profile Scores (IPS) and Credit Impact Scores (CIS)</a> coverage from approximately 1,700 rated entities in 2021 to more than 10,000 governments, financial institutions and corporations across sectors globally. This provides greater transparency to market participants on how these issues impact credit ratings.</li> <li>» Expanded coverage of <a href="#">Carbon Transition Assessments</a>, now covering 100% of the Company's rated portfolio in eight sectors that have high or very high exposure to carbon transition risks.</li> <li>» Expanded industry coverage of MIS' <a href="#">Environmental and Social Risk Heat Maps</a>, allowing users to visualize the relative ranking of more sectors along environmental and social risk classifications.</li> <li>» Moody's <a href="#">Carbon Footprint and Temperature Alignment Data</a> now integrates Scope 3 emissions, allowing for enhanced comparisons of company emissions targets against recognized benchmarks.</li> <li>» Moody's <a href="#">ESG Score Predictor tool</a> now enables users to derive emissions intensities (Scope 1, 2 and 3) and additional climate-related metrics for 350+ million companies worldwide, covering across all sectors.</li> <li>» Integration of Moody's RMS <a href="#">physical risk modeling</a> into existing Moody's products and services, including Moody's <a href="#">REIS Platform</a> for commercial real estate and Moody's <a href="#">Commercial Mortgage Metrics</a>.</li> <li>» Integration of Moody's Climate Risk Assessment into <a href="#">CreditLens™</a> to support lending decisions.</li> <li>» Integration of ESG scores and narratives into Moody's <a href="#">CreditView</a> allows investors to evaluate credit risk comprehensively.</li> </ul>	<ul style="list-style-type: none"> <li>» Participated in the Climate Data Steering Committee to publish <a href="#">recommendations on the design of a new open-data utility</a> that would make climate transition-related data openly available in a single place for the first time.</li> <li>» Published a <a href="#">request for market feedback</a> on a proposed new framework for providing Net-Zero Assessments (NZAs) for nonfinancial corporate entities. NZAs would offer an independent and comparable assessment of the strength of an entity's carbon transition plan.</li> </ul>





# Impact on Business, Strategy and Financial Planning

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## NONFINANCIAL MATERIALITY ASSESSMENT AND CLIMATE

In 2022, Moody's refreshed the Company's nonfinancial materiality assessment which identified the key topics relevant to both internal and external stakeholders and the continued business success of the Company. Climate remained a high focus issue with significant influence on business success and a high level of importance to business stakeholders. This supports the Company's strategic emphasis on stakeholder engagement on climate issues reflected in the [Decarbonization Plan](#).

## PHYSICAL AND TRANSITION CLIMATE RISK

While both physical climate and transition risks have the potential to impact any business, either now or in the future, Moody's has not experienced the realization of any financially material climate-related risks to date. The Company's forward-looking climate risk modeling affirms the understanding that climate is not expected to materially impact Moody's business in the future.

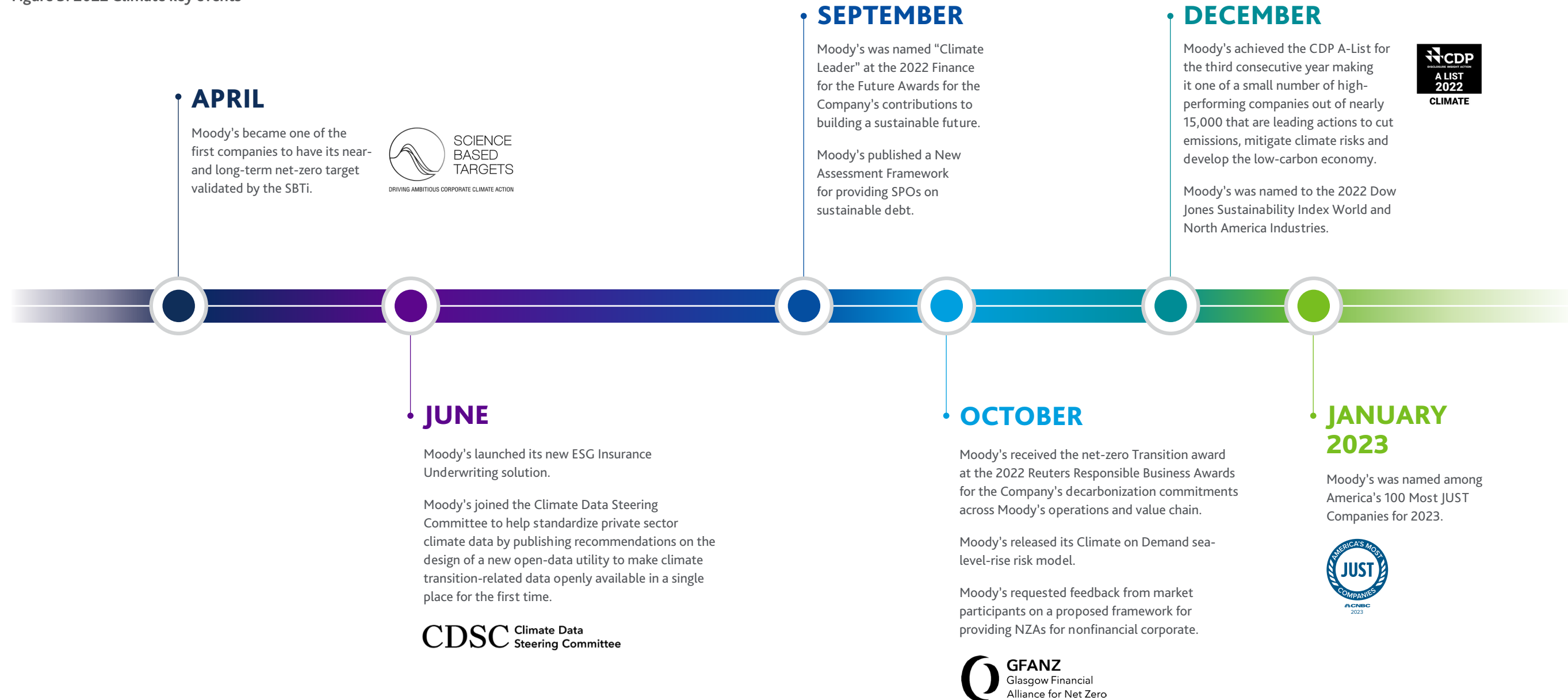
Regardless of the anticipated low impact of climate risks assessed over the long-term, Moody's continues to monitor and evaluate the materiality of these risks to inform its ongoing climate strategy. A breakdown of the analyzed physical and transition climate risks are detailed in Tables 6 and 7.

Table 5: Moody's business, strategy and financial planning have been proactively influenced by climate-related themes

CLIMATE THEME	MOODY'S ACTION
<b>Targets</b>	<ul style="list-style-type: none"> <li>» In 2021, Moody's announced its commitment to achieve net-zero emissions across operations and value chain by 2040, bringing the Company's net-zero target forward by 10 years.</li> <li>» To support Moody's Decarbonization Plan, since 2020 the Company has tied together its financial and climate performance. The compensation of Moody's senior executives and key members of the Procurement team has been linked to the Company's performance along clearly defined ESG metrics and progress against its climate targets.</li> </ul>
<b>Disclosures</b>	<ul style="list-style-type: none"> <li>» Moody's was recognized with CDP's "A" Score on Climate Action for the third consecutive year.</li> <li>» The Company was showcased in CDP's 2022 Stories of Change publication, which acknowledges the acceleration of Moody's net-zero target, brought forward to 2040. This marks the second year in a row Moody's was featured.</li> <li>» Moody's joined the U.N. Global Compact's Early Adopters Program. The Company was one of the first to disclose using the enhanced Communication of Progress.</li> </ul>
<b>Acquisitions</b>	<ul style="list-style-type: none"> <li>» Climate positively influences Moody's product development and acquisition strategy. The 2021 acquisition of Moody's RMS improved the accurate identification of financial impact by catastrophes while accounting for economic risks, financial performance and creditworthiness.</li> </ul>
<b>Stakeholder engagement</b>	<ul style="list-style-type: none"> <li>» Moody's 2020 nonfinancial materiality assessment was refreshed in 2022, in part, to align its climate strategy with stakeholders' expectations.</li> <li>» In 2022, Moody's published its first U.S. Political Engagement Report. In addition to Moody's Political Engagement and Public Policy Statement, the U.S. Political Engagement Reports recognize Moody's role as a responsible corporate citizen in line with the Company's climate commitments.</li> <li>» The Company became a founding member of the U.S. Economic Opportunity Coalition, a historic effort to catalyze and align public and private investments to accelerate inclusive economic growth.</li> <li>» Moody's Analytics used its AI tools to review the financial disclosures of large public corporations to assess their alignment with the TCFD's recommendations in support of the TCFD's 2022 status report, which was presented to the Financial Stability Board.</li> </ul>
<b>Thought leadership</b>	<ul style="list-style-type: none"> <li>» Moody's published a case study on how the Company accelerated its climate ambition to reach net-zero by 2040, a decade earlier than its initial commitment.</li> <li>» In 2023, Moody's will be releasing a GFANZ Asia-Pacific (APAC) region case study, following the launch of GFANZ APAC Network.</li> </ul>



Figure 3: 2022 Climate key events



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# Resilience of Strategy (Scenario Analysis)

## SCENARIO ANALYSIS RESULTS SUMMARY

In 2022, Moody's modeled the projected business impacts of physical and transition climate risks that may materialize under a wide array of potential futures. Physical risks refer to those arising from acute climate events (e.g., extreme weather) and from chronic and longer-term shifts in climate (e.g., sea level rise). Transition risks refer to those associated with achieving a lower-carbon economy, encompassing disruptions due to changing policy, technology, market, legal and/or reputational conditions. The results of these analyses are summarized in Table 6 and indicate a "low" impact level in all scenarios. These impact ratings are based on both a qualitative analysis of Moody's business model and the risk mitigating effects of Moody's climate leadership; and a quantitative analysis of results from Moody's carbon pricing modeling, climate-adjusted probability of default analysis, and modeling of physical risk hazards and climate-related financial impacts. To explore the forward-looking impacts of physical and transition risks, Moody's made use of climate scenario models developed by the Intergovernmental Panel on Climate Change (IPCC) and the NGFS. The complete scenario analysis results, as well as descriptions of the future climate scenarios assessed, can be found in the Physical Risk Analysis (p. 20) and Transition Risk Analysis sections (p. 28), respectively.

Table 6: Physical risk scenario analysis results summary

**Low impact** Not exposed or not significantly exposed to historical or projected risks  
**Medium impact** Exposed to some historical and/or projected risks  
**High impact** Exposed today and exposure level is increasing

PHYSICAL RISKS UNDER IPCC SCENARIOS	IMPACT LEVEL <sup>1</sup>			MANAGEMENT AND MITIGATION	
	Short-term	Medium-term	Long-term		
<b>Acute</b>	<b>Inland flooding</b>	RCP 8.5			<ul style="list-style-type: none"> <li>» Moody's enhanced the Company's physical risk scenario analyses to explore the financial impacts of extreme weather events on the Company's offices, data centers and remote work locations. Employee homes were projected to have the greatest percentage of asset value at risk, while offices were determined to be the least vulnerable. Overall, physical risks for Moody's global real estate portfolio were found to be of low impact, suggesting that acute physical climate risks are not financially material for Moody's.</li> <li>» Any acute climate-related risks to Moody's supply chain form part of the Company's supplier screening, selection and due diligence processes.</li> <li>» Data centers operated by Moody's are shifting to the cloud, lowering the Company's direct exposure to acute physical risks.</li> <li>» Moody's regularly assesses the physical risks to offices and data center locations to allow for appropriate resilience and mitigation measures, including guidance to employees on issues that could impact their ability to work remotely.</li> <li>» Moody's provides remote connectivity and collaboration tools to enable employees to work from home in case of a disruption to normal business operations.</li> <li>» Moody's is in the process of implementing enhanced risk management tools to enable the mapping of operational resiliency and assessments of business interruption risks, allowing Moody's to further reduce recovery and interruption times.</li> </ul>
		RCP 4.5			
	<b>Wildfires</b>	RCP 8.5			
		RCP 4.5			
	<b>Tropical cyclones</b>	RCP 8.5			
		RCP 4.5			
<b>Chronic</b>	<b>Heat stress</b>	RCP 8.5			<ul style="list-style-type: none"> <li>» Across all time horizons and climate scenarios evaluated, chronic physical risks for Moody's global real estate portfolio were found to be of minimal impact.</li> <li>» Moody's expects comfort cooling operating costs to increase and will monitor such sites so that the Company can continue to source 100% renewable electricity.</li> <li>» Moody's analyses suggest that water stress primarily affects industrial assets. As Moody's global real estate portfolio is comprised of commercial and residential assets, Moody's exposure to this risk is considered minimal. Nevertheless, sites in regions that may be impacted are monitored in terms of contingency planning and adaptation measures installed at the city level.</li> <li>» High-risk sites are logged on Moody's ERM registry to be assessed on an ongoing basis and key metrics are reviewed by the Real Estate team to enable early identification of rising consumption or costs.</li> </ul>
		RCP 4.5			
	<b>Water stress</b>	RCP 8.5			
		RCP 4.5			
	<b>Coastal flooding</b>	RCP 8.5			
		RCP 4.5			

<sup>1</sup> Moody's applies the IPCC Representative Concentration Pathways (RCP) scenarios for the physical risk scenario analysis. See the Physical Risk Analysis section (p. 20) for more information about RCP 4.5 and RCP 8.5.

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Table 7: Transition risk scenario analysis results summary

**Low impact** Not exposed or not significantly exposed to historical or projected risks    **Medium impact** Exposed to some historical and/or projected risks    **High impact** Exposed today and exposure level is increasing

TRANSITION RISKS UNDER NGFS SCENARIOS	IMPACT LEVEL <sup>1</sup>			MANAGEMENT AND MITIGATION	
	Short-term	Medium-term	Long-term		
<b>Policy and legal</b> <b>Increased costs of GHG emissions and procurement of 100% renewable electricity (cost expressed as % of 2022 EBIT)</b>	Net Zero 2050			» Moody's analysis of the potential costs of mandatory carbon pricing under multiple transition scenarios revealed that these costs are not material across all assessed time horizons. » Moody's exposure to carbon pricing risk is mitigated by the Company's ambitious climate strategy, including validated science-based targets, commitment to sourcing 100% renewable electricity, supplier engagement program and application of an internal carbon price on business travel.	
	0.7%	0.8%	0.7%		
	Divergent Net Zero				
	2.1%	2.0%	1.6%		
	Delayed Transition				
	0.1%	0.1%	0.5%		
	<b>Enhanced emissions reporting obligations</b>	Net Zero 2050			» Increased emissions reporting obligations are considered highly likely across all assessed transition scenarios. The expected impact of such regulations is low as a result of Moody's ongoing disclosure and reporting commitments. » Moody's monitors relevant existing and emerging regulations regarding emissions reporting to ensure ongoing compliance.
		Divergent Net Zero			
Delayed Transition					
<b>Escalated mandates and regulations on existing products and services</b>	Net Zero 2050			» Moody's projects the impact of potential mandates on its products and services to be low, due to the Company's ongoing strategy to incorporate climate considerations across its products and services. As detailed in the opportunities section (Table 2), Moody's regularly seeks to develop and deploy opportunities to incorporate ESG metrics and insights to enhance its product offerings. » Risks resulting from potential non-compliance with all relevant current regulations are managed internally and collaboratively by a wide range of experts in Moody's corporate governance model. These experts include representatives from Legal, Internal Audit, Compliance, GPRA, Stakeholder Sustainability, Finance and Regional Businesses.	
	Divergent Net Zero				
Delayed Transition					
<b>Heightened exposure to litigation</b>	Net Zero 2050			» Moody's legal department is responsible for evaluating the risk of climate-related litigation, including from customers or third parties in connection with their use of Moody's data. Moody's ongoing focus on the quality of its data and dedication to remediating any gaps in best available information mitigates its litigation exposure risk relating to Moody's data. » In addition, Moody's is enhancing the rigor of its climate reporting processes through a recently implemented Environmental Management System. The system includes full accounting and disclosure of the Company's GHG inventory, attainment of third-party assurance and new internal systems and controls to track climate data. » Moody's revised product offerings and climate-related analytical initiatives incorporate policy-related transition risk considerations, thereby assisting in managing Moody's own transition risks.	
	Divergent Net Zero				
Delayed Transition					

(continued)

<sup>1</sup> Moody's applies the NGFS scenarios for the transition risk scenario analysis. See the Transition Risk Analysis section (p. 28), as well as the NGFS Scenario Portal.

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**Low impact** Not exposed or not significantly exposed to historical or projected risks     **Medium impact** Exposed to some historical and/or projected risks     **High impact** Exposed today and exposure level is increasing

TRANSITION RISKS UNDER NGFS SCENARIOS	IMPACT LEVEL <sup>1</sup>			MANAGEMENT AND MITIGATION
	Short-term	Medium-term	Long-term	
<b>Technology</b> <b>Costs to transition to lower-emissions technologies</b>	Net Zero 2050			» Moody's reduces its exposure to costs from energy markets and regulation change through the Company's voluntary commitment to sourcing 100% renewable electricity across its operations. Moody's transition scenario analysis reveals that under all assessed future scenarios, the costs of the Company's procurement of renewable electricity is likely to be lower than the avoided costs of carbon pricing. Furthermore, Moody's utility spend only represents 0.1% of the Company's annual operating costs, which also diminishes its financial exposure to a potential increase in energy prices.  » Technology risks are managed through portfolio-wide tracking of energy and utility usage, and by monitoring the availability of advancements in low-carbon equipment for the Company's operations. Moody's also works with relevant internal partners who assist in calculating the Company's global footprint and provide recommendations to reduce energy consumption through the use of technological and sustainable enhancements in Moody's offices and buildings.
	Divergent Net Zero			
	Delayed Transition			
<b>Market</b> <b>Customer behavior</b>	Net Zero 2050			» Moody's exposure to market risk is mitigated by its monitoring of current and emerging market dynamics, and the proactive integration of ESG data and insights across the Company's products and services. For example, in 2022, climate considerations were further integrated into Moody's flagship solutions, such as Moody's EDF™ model providing climate-adjusted probability of default for public and private companies. Moody's also continue to build and expand its SPO capabilities to better meet market needs.
	Divergent Net Zero			
	Delayed Transition			
<b>Reputation</b> <b>Stigmatization of sector</b>	Net Zero 2050			» As a firm that provides integrated risk assessment services for global customers across sectors, Moody's recognizes the potential for stigmatization due to commercial ties with customers from emissions-intensive sectors. Although revenue exposure to organizations deemed at high environmental risk is tracked by Moody's, the total impact of this exposure is not considered material to the overall commercial strategy and mission of facilitating better decisions through transparency.  » This risk is further mitigated through Moody's focus on the integration of ESG considerations across its suite of products and services, including credit ratings and MIS' Issuer Profile and Credit Issuer Scores.
	Divergent Net Zero			
	Delayed Transition			
<b>Reputation</b> <b>Increased stakeholder concern or negative stakeholder feedback</b>	Net Zero 2050			» Though Moody's most recent materiality assessment reconfirmed that climate-related risks are considered relevant and important by Moody's stakeholders, Moody's does not expect climate-related reputational risk to have a material impact on the Company, as its ongoing net-zero commitment and climate goals secure its position and the mechanisms that it has instituted in order to reach its targets are robust. Moody's addresses stakeholder expectations through ongoing reporting transparency and stakeholder engagement on climate-related issues.
	Divergent Net Zero			
	Delayed Transition			

<sup>1</sup> Moody's applies the NGFS scenarios for the transition risk scenario analysis. See the Transition Risk Analysis section (p. 28), as well as the NGFS Scenario Portal.

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## CLIMATE-ADJUSTED PROBABILITY OF DEFAULT

For the second consecutive year, Moody's evaluated its financial exposure to climate risks by assessing the Company's climate-adjusted probability of default using Moody's CreditEdge Public Firm EDF™ model. This analysis models Moody's probability of default arising from climate-related physical and transition risks across the Company's portfolio under different NGFS climate scenarios. These scenarios are designed by NGFS and an expert group of climate scientists and economists to provide a common and up-to-date reference point for understanding how climate change, policy and technology trends could evolve under different futures.<sup>1</sup>

Moody's climate-adjusted Annualized Expected Default Frequency is shown in Figure 4 by time horizon (tenor) and broken down by climate scenario, with each scenario showing combined physical and transition risks. The 20-year tenor period coincides with Moody's own risk considerations in the long-term horizon as previously defined in the Strategy section (p. 9). Figures 5 and 6 show the difference in the forward EDF (the percent change in EDF over time) by tenor and climate scenario for physical and transition risks, respectively.

## USING THE CREDITEDGE PUBLIC FIRM EDF™ MODEL

- » The model centers on the EDF metric, which measures the probability that a firm will default in one year.
- » Default is defined as the failure to make scheduled principal or interest payments, or a bankruptcy filing. It is determined as the point in time where the market value of a firm's assets falls below the book value of its liabilities.
- » Climate-adjusted probability of default (i.e., climate-adjusted EDF) considers the financial impacts of physical and transition climate risks under different climate scenarios against a firm's baseline EDF. Physical risks impact asset valuation and volatility through the increased frequency and severity of acute climate events, and transition risks can impact asset valuation, for instance, through increased taxes on carbon emissions that may be passed across the supply chain.
- » Physical risks are modeled through combined top-down and bottom-up approaches. The top-down approach leverages global damage functions in climate scenarios and the bottom-up approach uses Moody's facility-specific physical risk metrics to distribute the global damages into damages at the company level.
- » Transition risks are modeled by leveraging an Integrated Assessment Model (IAM), the Global Change Assessment Model and Moody's firm competition model. The IAM model is used to capture competition between sectors (inter-sectoral competition) under different climate scenarios. The firm competition model captures the relative competitive performance of firms within a sector (intra-sectoral competition), leveraging information on firms' emissions and energy usage.
- » Combined risk refers to the combined projected impacts of physical and transition risks to an asset's valuation and volatility under each scenario.



<sup>1</sup> For more information on the NGFS scenarios that Moody's has incorporated within its scenario modeling, see the Transition Risk Analysis section (p. 28), as well as the [NGFS Scenario Portal](#).



The analysis highlighted three key findings:

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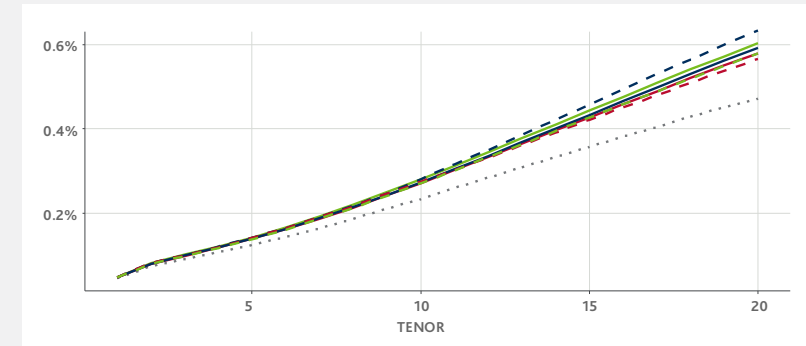
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**1 Climate risks are not projected to have a material impact on Moody's business**

Although climate risks are observed to increase Moody's EDF relative to the Company's baseline EDF term structure, the company's credit risk remains very low (less than 1%) across all tenor periods and across all climate scenarios applied. This does not meet Moody's financial materiality threshold as previously defined in the Strategy section (p. 9). Over the long-term, Moody's performs best under the NGFS Nationally Determined Contributions (NDC) scenario and worst under the Divergent Net Zero scenario due to the delayed, disruptive and subsequently accelerated policy action expected from this latter scenario.

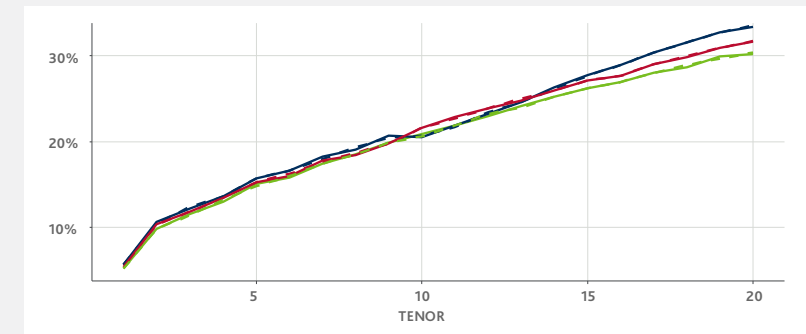
Figure 4: Moody's combined risk (EDF term structure by scenario)



**2 Physical climate risks more directly impact Moody's probability of default**

While Moody's credit risk remains low across all scenarios, physical hazards were determined to have a greater influence than transition risks on Moody's probability of default. This is due in part to Moody's Decarbonization Plan and science-based targets, which mitigate the Company's exposure to transition risks. Over the long-term time horizon, physical risk is projected to increase Moody's forward EDF by 30% in a best-case scenario (represented by the NGFS Net Zero 2050 scenario) and by 34% in a worst-case scenario (represented by the NGFS Delayed Transition scenario). The impacts of physical risk on Moody's credit risk is of comparable magnitude across the different climate scenarios.

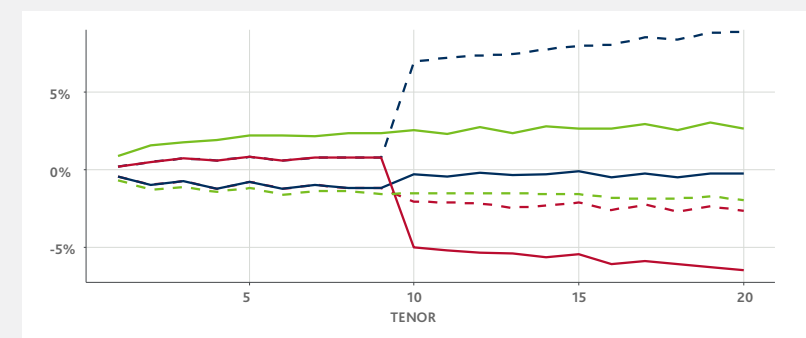
Figure 5: Moody's physical risk (impact on Moody's EDF by scenario)



**3 Transition climate risks are more sensitive to climate scenarios**

The impact of transition risks on Moody's EDF is far more dependent on the climate scenarios examined. Over the long-term time horizon, Moody's EDF is projected to increase by as much as 9% under a Divergent Net Zero scenario, but is projected to decrease by more than 6% under a NDCs scenario. The scenario dependence of Moody's credit risks informs the Company's monitoring of global trends in order to track which scenarios are increasingly likely to materialize.

Figure 6: Moody's transition risk (impact on Moody's EDF by scenario)



Below 2°C    Delayed Transition    Current Policies    Baseline  
 Net Zero 2050    Divergent Net Zero    NDCs

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



# Physical Risk Analysis

## METHODOLOGY AND PROCESS

Moody's 2022 climate scenario analysis builds on the work conducted in previous years to evaluate its climate-related risks. This year's enhancements include quantifying the climate-related financial impacts of acute and chronic physical risks across a range of scenarios and time horizons, using Moody's RMS' latest modeling available through Moody's CoD Pro product (see Table 4).<sup>1</sup> CoD Pro integrates Moody's RMS' latest climate risk models, which provide quantification of costs and damages from climate change across acute and chronic risks for a range of scenarios and timeframes.

These new capabilities allow Moody's to:

- » Better understand the business implications of a range of physical climate scenarios.
- » Stress test the Company's existing strategy.
- » Strengthen the Company's resiliency to climate-related impacts.

Moody's continues to monitor advancements in global emissions and climate policy to determine which physical and transition drivers are most likely to materialize in the future.

The parameters of Moody's physical risk analysis are provided in Figures 7-9, spanning the future scenarios modeled, the climate perils assessed and the metrics underpinning the financial quantification of risk. This analysis covers 100% of offices and data centers from Moody's global operations as of December 31, 2022. In addition, the impact of remote working capabilities is assessed via the quantification of risk to employee home locations,<sup>3</sup> enabling Moody's to better understand the implications of the Company's hybrid work model and strengthen its resiliency planning accordingly.

### Figure 7: Physical scenarios evaluated

Moody's applies the IPCC Representative Concentration Pathways (RCP) scenarios<sup>2</sup> to explore forward-looking physical risks. As with Moody's transition risk scenario analysis, physical risks are assessed across short- (2025), medium- (2030) and long-term (2040) time horizons.

SCENARIO	IPCC EMISSION SCENARIO	DESCRIPTION	OUTCOME (Global Mean Surface Temperature Change relative to baseline)
Mid-range emissions scenario	Mid-range emissions scenario IPCC Representative Concentration Pathway 4.5 (RCP 4.5)	An intermediate emissions scenario with moderate additional effort to constrain emissions.	This scenario is expected to result in global warming of 2.7°C by the end of the century, with a modeled temperature increase range of 2.4°C-2.9°C. Physical risks are intermediate.
High emissions scenario	High emissions scenario IPCC Representative Concentration Pathway 8.5 (RCP 8.5)	A very high GHG emissions scenario with emissions continuing to rise to the end of century.	This scenario is expected to result in global warming of 4.2°C by the end of the century, with a modeled temperature increase range of 3.7°C-5.0°C. Physical risks are high.

Source: IPCC, [https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC\\_AR6\\_WGIII\\_FullReport.pdf](https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_FullReport.pdf).

<sup>1</sup> The Moody's RMS modeling used is a pre-release deployment of CoD Pro (version 13) and the underlying modeling is subject to change.

<sup>2</sup> Moody's physical risk analyses utilize inputs from the Coupled Model Intercomparison Project (Phase 6), <https://pcmdi.llnl.gov/CMIP6/>.

<sup>3</sup> The assessed employee home locations represent 91% of all Moody's employees as of December 31, 2022.

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Moody's projections of the financial impacts of climate change on its business utilize the Annualized Damage Rate (ADR) metric, or the expected financial damage per unit of exposure. ADR is defined as the financial damage potential per \$1,000 value of an asset or portfolio. For example, the maximum ADR reported in Moody's physical peril analysis is 0.57 (see Forward-Looking Climate Risk on p. 24). This implies that if an individual asset was valued at \$1 million, the Company would expect to incur, on average, \$570 in damages per year to that specific asset. Similarly, if a portfolio was valued at \$100 million, an ADR of 0.57 implies that, on average, the Company would expect to incur \$57,000 in damages per year across all locations that constitute the portfolio. This metric enables comparisons between assets and portfolios on a normalized basis and distinguishes between locations based on vulnerability of different property types, such as an office block (commercial) versus a single-family dwelling (residential), as well as hazard level. The ADR therefore incorporates the resilience attributes of Moody's global real estate portfolio, including building attributes and the geographic dispersion of its sites.

Figure 8: Peril coverage of Moody's physical risk analysis<sup>1</sup>







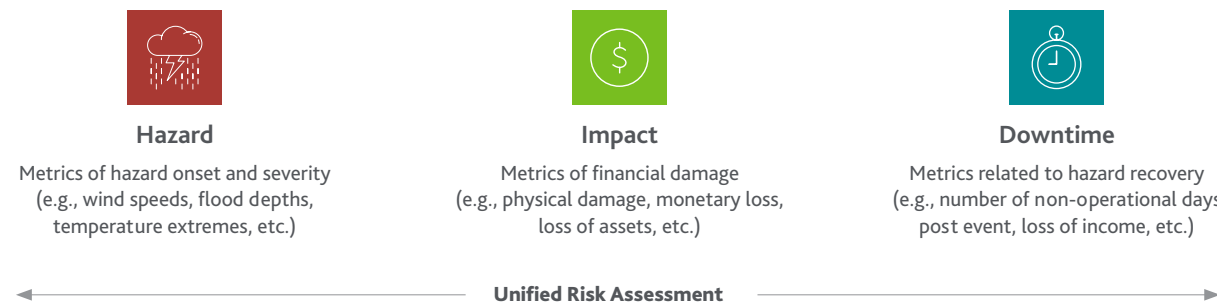
ACUTE HAZARDS		CHRONIC HAZARDS	
	Tropical cyclones		Heat stress
	Inland flooding		Water stress
	Wildfires		Coastal flooding

Figure 9: CoD Pro's unified risk assessment

The physical climate risk models produce the loss from damage and downtime to assets, incorporating tens of thousands of bottom-up weather simulations. The models use asset location, replacement costs and building attributes to calculate the severity of extreme physical events. The physical parameters of these events are then converted into projections of damage and downtime losses.



<sup>1</sup> Moody's CoD Pro application enables the Company to also model its exposure to earthquake risk, which informs the Company's operational strategy despite earthquakes not being considered a climate hazard.



## PHYSICAL RISK ANALYSIS: PRESENT-DAY AND FORWARD-LOOKING

Present-day physical risk analysis results were determined by referencing data from a 2022 baseline year. Forward-looking physical risk analysis results were focused on the long-term 20-year horizon; both a high-emission and mid-case scenario were evaluated to integrate mitigation strategies into financial planning. Across all examined scenarios (present-day and forward-looking), the projected impacts of physical climate risk remained low and did not exceed Moody's financial materiality threshold (detailed in the following sections).

### Present-day climate risk

To date, Moody's has not experienced any material impact from physical climate perils. Similarly, Moody's analyses of present-day climate risks to its office spaces, data centers and remote working locations confirm that these perils do not currently pose a material risk to the Company. The key findings of these analyses include:

- » The ADR of each asset type remains very low and never exceeds 0.40 or \$400 in damages for every \$1 million of exposure (Table 9).
- » Across the three asset types analyzed, remote working locations have the highest collective risk, exhibiting an ADR almost three times that of Moody's offices and over 1.3 times that of its data centers.
- » Geographically, climate risk for Moody's is concentrated in the U.S., India and the U.K., which represent a significant majority of data center and remote work locations as well as a plurality of office locations (Table 8).

Table 8: Top five country contribution to risk exposure across all perils (based on number of locations)

GLOBAL OFFICES	GLOBAL DATA CENTERS	GLOBAL REMOTE WORK LOCATIONS
» U.S. (22%)	» U.S. (48%)	» U.S. (40%)
» India (12%)	» U.K. (15%)	» U.K. (14%)
» U.K. (7%)	» Singapore (7%)	» India (13%)
» China (5%)	» India (7%)	» France (5%)
» France (4%)	» Germany (4%)	» Canada (3%)

Table 9: Present-day physical risks by asset type and peril

	ASSET ADR	ACUTE			CHRONIC		
		Inland floods	Wildfires	Tropical cyclones	Heat stress	Sea-level rise	Water stress
Offices	0.14	0.06	0.00	0.04	0.03	0.01	0.00
Data centers	0.31	0.24	0.00	0.02	0.03	0.01	0.00
Employee homes	0.40	0.11	0.02	0.09	0.03	0.15	0.00

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

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» Inland flooding was consistently revealed to present the highest risk to each asset type – contributing to as much as 79% of total risk for Moody's data centers, and 43% of total risk to its offices. Moody's remote work locations also experience some vulnerability to coastal flooding and cyclones as a result of their concentration along coastlines (Figure 12).

» Figure 11 demonstrates that office exposure to inland flooding is globally distributed, while exposure to other hazards is much more regionally concentrated. Moody's coastal offices in the U.S., India and eastern Asia are exposed to cyclones, while the Company's offices on the U.S.'s West Coast are most likely to be impacted by wildfires. In Europe, heat stress and inland flooding are the dominant perils.

» As shown in Figure 10, Moody's physical risk exposure from offices is largely driven by a few locations. Moody's Candor Techspace office in Gurgaon, India, and its headquarters in New York collectively contribute to 46% of total office ADR, particularly due to these offices' vulnerability to inland flooding and cyclones, respectively. Together, 10 locations represent 71% of total present-day physical risk across all of the Company's offices, which serves to inform resiliency planning at these sites. Moody's has refreshed its climate change assessment of its New York headquarters at 7 World Trade Center to see how these risks are expected to evolve over time (Figure 15).

Figure 10: Top ten Moody's offices driving present day physical risk<sup>1</sup>

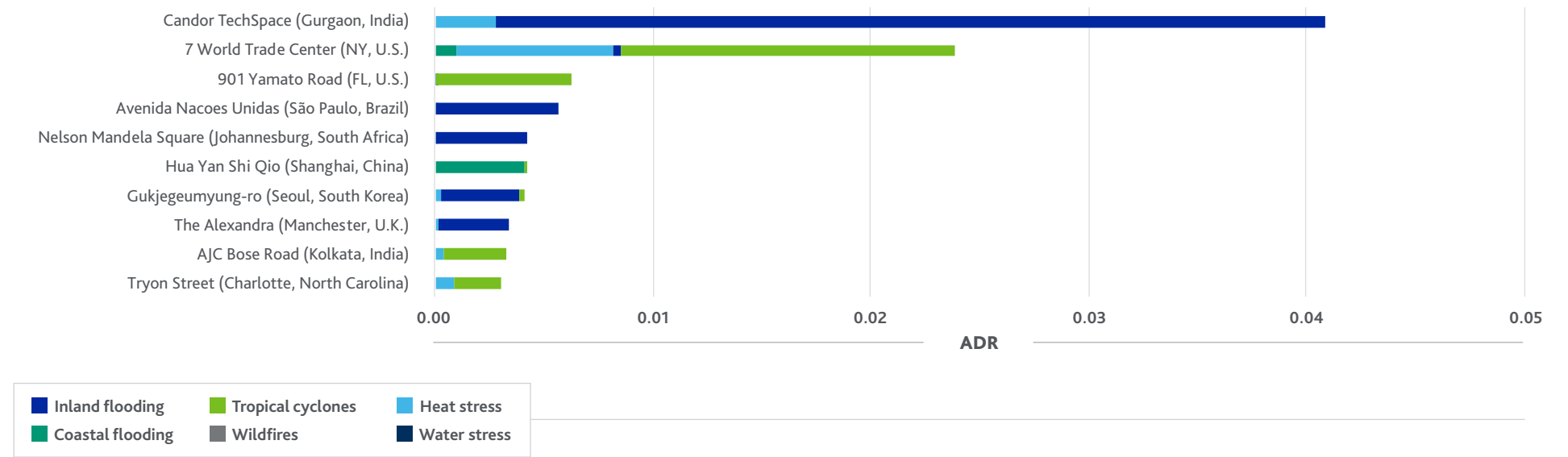


Figure 11: Distribution of office risk by geography and peril

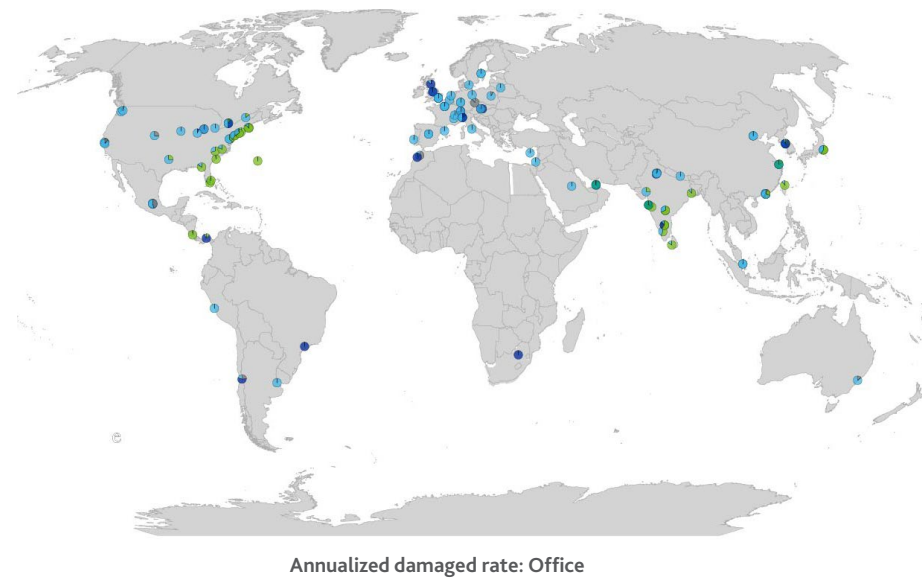
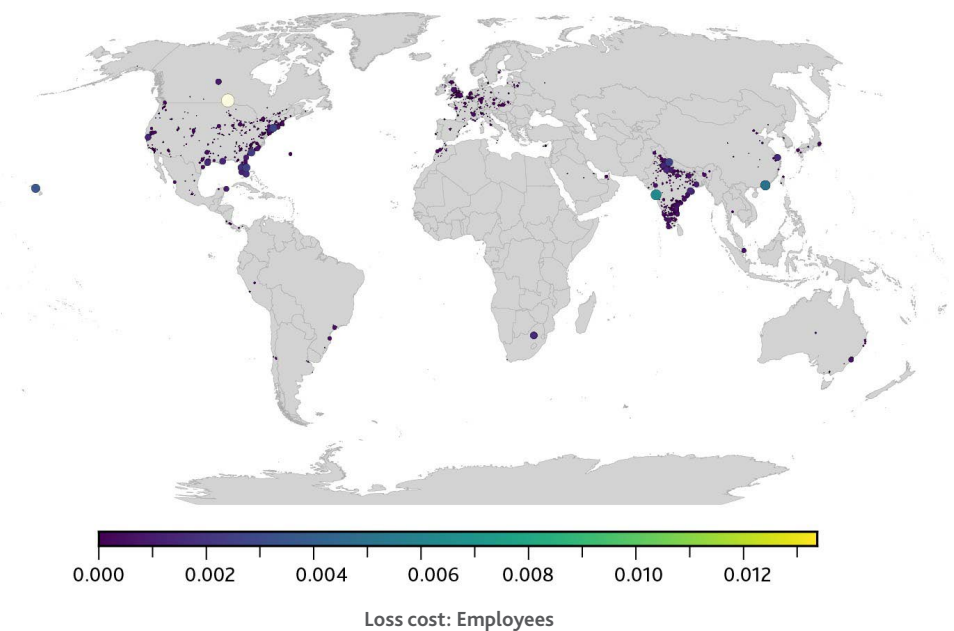


Figure 12: Distribution of risk to remote work locations (all perils)



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

<sup>1</sup> The ADR metric provided is normalized based on the headcount of each office relative to Moody's total headcount. This provides a more relevant metric that sums to the Company's aggregate ADR and accounts for the relative importance of each office from a headcount perspective.

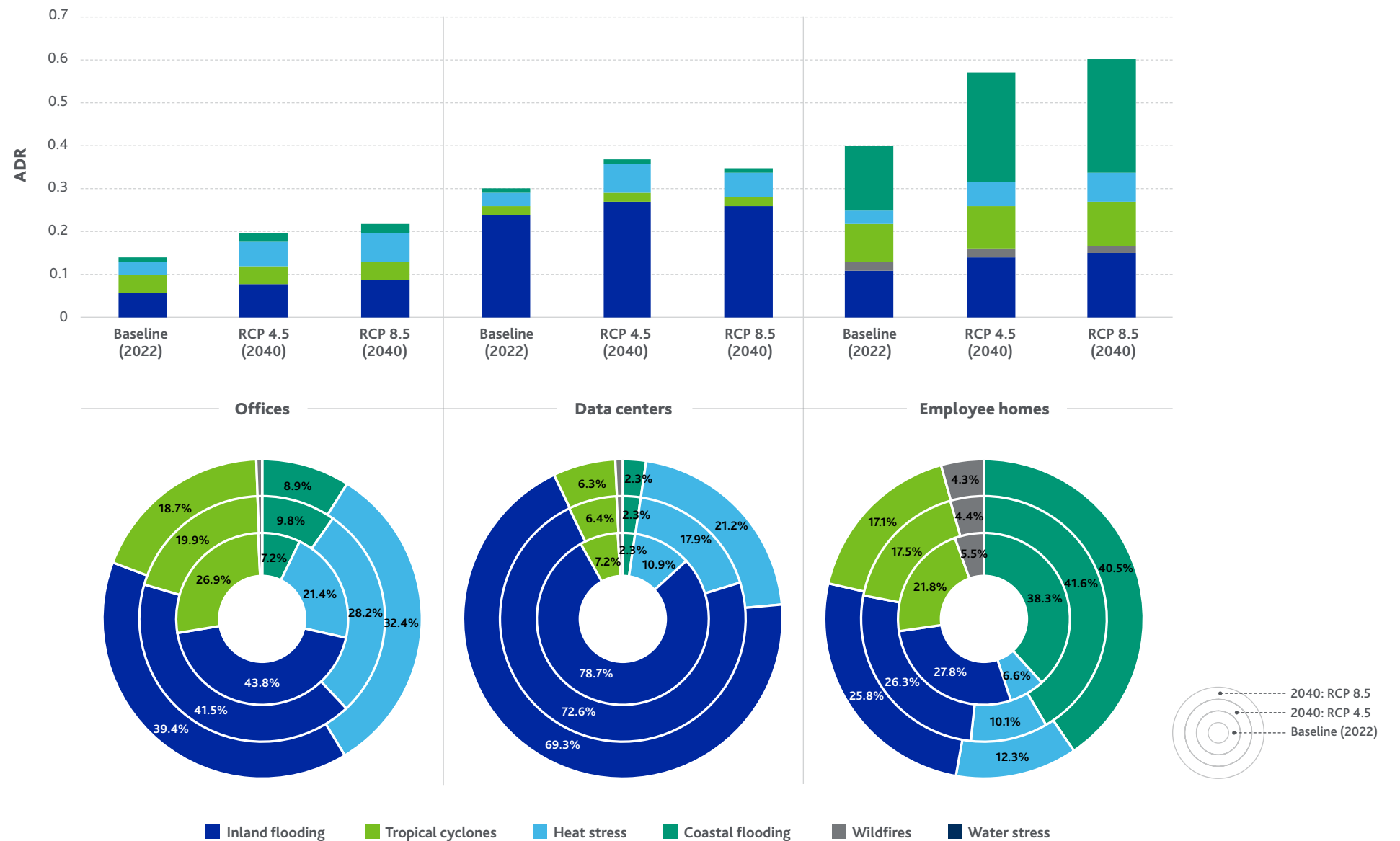


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### Forward-looking climate risk

Moody's forward-looking analyses of the six assessed climate perils demonstrated that physical risks are expected to have an increased impact by 2040 as compared to the 2022 baseline year. Across both the high-emissions and mid-range emissions scenarios, each asset type exhibited an increase in ADR by 2040 ranging from 22% (for data centers under a mid-range emissions scenario) to 61% (for offices under a high emissions scenario). While the impacts of climate risks on Moody's offices were projected to nearly double, the total annualized damage ratio of each asset type was still considered to be minimal regardless of the scenario applied (Figure 13). Furthermore, Moody's observed very little differentiation in ADR between the high-emissions and mid-range emissions scenarios across any of three asset types – both in each asset type's total ADR, and in the respective importance of each peril to that asset type. This suggests that Moody's exposure to physical climate risks is unlikely to be substantially influenced by the climate scenario experienced between now and 2040. These results mirrored those of Moody's climate-adjusted probability of default analysis (p. 18). Both modeling exercises resulted in similar findings, confirming that while Moody's business may be affected by climate change now and in the future, this impact is not considered material or significant.

Figure 13: Forward-looking physical climate risk by asset type, scenario and peril



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





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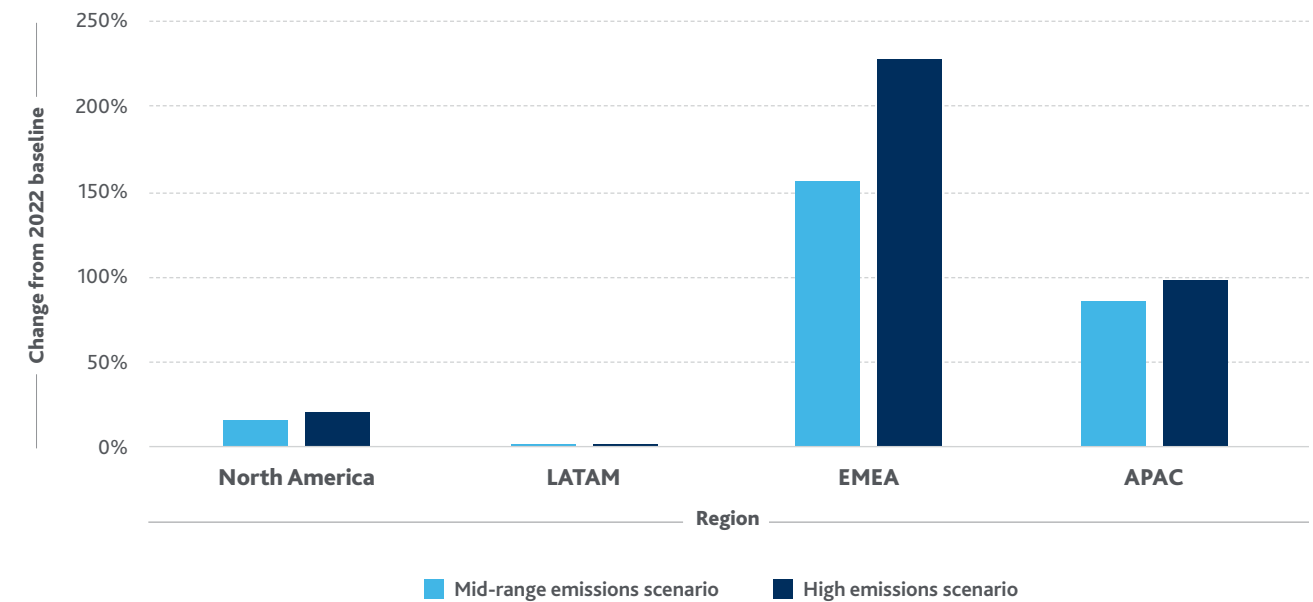
Moody's modeling of climate risk in the long-term time horizon resulted in similar conclusions to its present-day analyses. Of note:

- » The projected ADR was again highest for remote working locations (reaching 0.57 per \$1,000 under a high-emissions scenario), which was nearly 1.5 times that of Moody's data centers and approximately 2.5 times that of its offices. The risk associated with Moody's offices increased the most from the baseline year, but offices remained Moody's lowest-risk asset type. The change in risk associated with Moody's data centers was considered minimal.
- » When breaking down Moody's climate risk by peril, inland flooding remained the most consequential hazard across all asset types, as it was the primary driver of projected financial damages (particularly for data centers). For employee homes, however, coastal flooding yields the most significant risk both in the present day and out to 2040 under both scenarios.
- » The ADR associated with each peril increased across all assets in both climate scenarios, with one notable exception – Moody's does not expect any impact from water stress in either the present-day or forward-looking time horizons.<sup>1</sup>
- » Furthermore, the projected risk was consistently higher in a high-emissions scenario than in a mid-range emissions scenario. The highest projected increases in ADR stemmed from coastal flooding and heat stress for offices; heat stress for data centers; and heat stress, coastal flooding, and inland flooding for remote working locations.

- » The increase in projected ADR for Moody's remote working locations is expected to be felt across all regions (Figure 14), with Europe, the Middle East and Africa (EMEA) experiencing the highest projected increases in risk by 2040 (albeit from a very low baseline). The projected increase in risk to remote working locations was considered minimal for all other regions.

While Moody's overall risk exposure to physical climate risks is low due to the Company's diverse global real estate locations and the robust mitigation strategies in place, it is noteworthy that acute risks were shown to contribute to a higher percentage of ADR than chronic risks through 2040. Moody's expects this trend to ultimately change later this century as the impacts of chronic risks are increasingly felt over longer time horizons. These findings will inform Moody's business continuity planning and help the Company further assess appropriate resilience measures for the management of its business.

Figure 14: Predicted change (2022 – 2040) in ADR for remote working locations by scenario and by region<sup>2</sup>



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

<sup>1</sup> This stems from the fact that water stress is primarily expected to impact industrial lines of business, whereas Moody's global real estate portfolio is comprised of commercial and residential assets.

<sup>2</sup> LATAM refers to Latin America. EMEA refers to Europe, the Middle East and Africa. APAC refers to Asia-Pacific.



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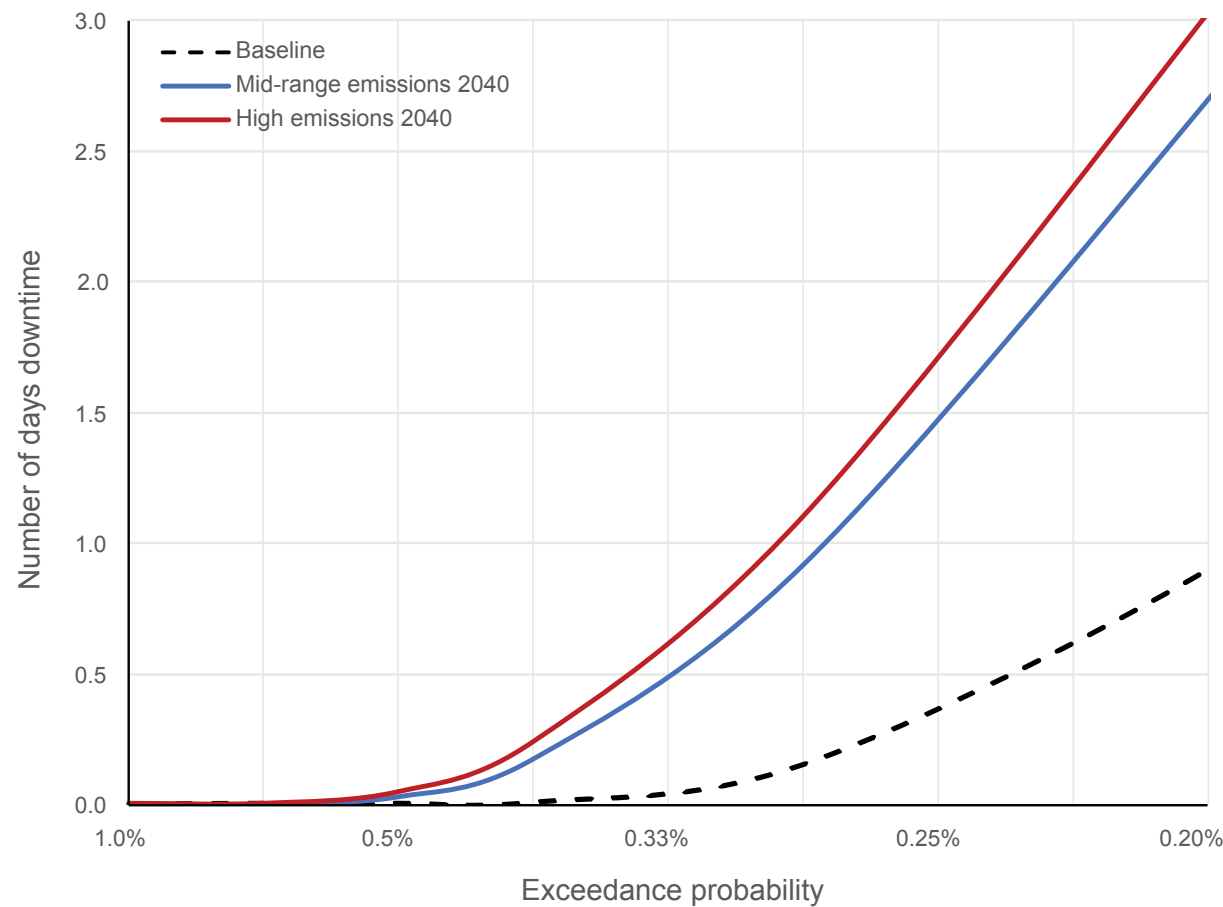
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### Acute risk climate change case study (7 World Trade Center)

Moody's headquarters at 7 World Trade Center in New York City has one of the highest levels of risk from climate-related catastrophes under both present day and forward-looking time horizons. The risk at this location is predominantly driven by the projected impacts of tropical cyclones, otherwise known as hurricanes.

To investigate this risk further, Moody's RMS conducted a detailed analysis of this office building using RMS' North Atlantic Hurricane probabilistic model (including climate conditioning). Increased risk from a change in hurricane frequency and size, combined with the impacts of sea level rise on associated storm surges during this century have been considered. The detailed model enables a thorough classification of the vulnerability of the building (including secondary modifiers such as presence of basements – basement damages drove a lot of the financial impact from storm surge during Hurricane Sandy). The results enable investigation into losses from longer return periods (e.g., events only expected on a one in 100-year frequency) as well as the average damage ratios used for the portfolio screening.

Figure 15: Exceedance probability curve for Moody's headquarters as a result of risk from hurricanes and associated storm surge (%) for baseline scenario (current day), the 2040 mid-range emissions scenario and the 2040 high-emissions scenario



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

Moody's analysis quantifies the probabilistic impact to its headquarters, as seen in the exceedance probability curve in Figure 15. The curve illustrates the probability of exceeding various days of downtime; for example, by 2040 under a high emissions scenario, there is a 0.2% probability of exceeding three days of downtime due to hurricane-induced damage. Moody's observed that applying either emissions scenario resulted in a more pronounced effect when considering losses at longer return periods.



### Considering uncertainty in forward-looking projections

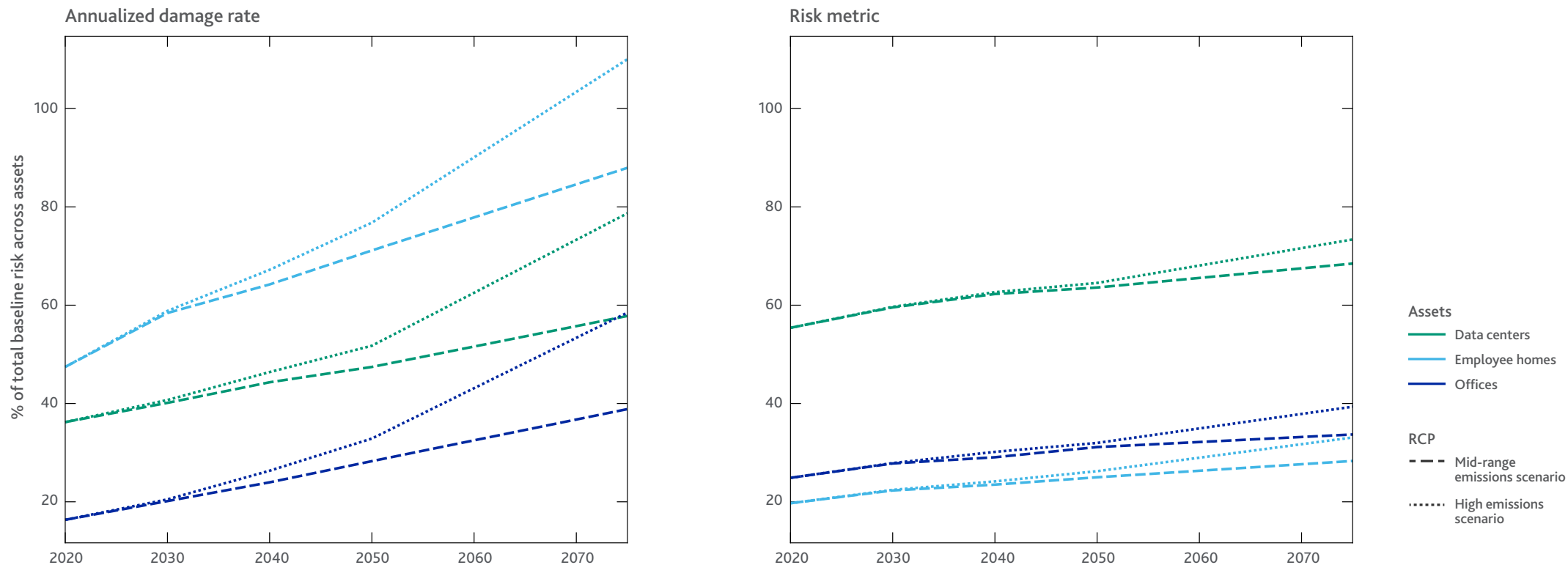
The CoD Pro product provides a comprehensive quantification of uncertainty around ADR values. The ADR is an estimate of mean annual loss, while the uncertainty is the standard deviation of the annual loss.

The standard deviation has several components, which can broadly be categorized into primary uncertainty, exposure uncertainty and secondary uncertainty. Primary uncertainty relates to uncertainty in climate conditions between the years surrounding each reported time horizon, as well as whether an event is triggered between years. Exposure uncertainty relates to the value of each location to the company as a whole. For example, if there is a high-risk location but its value to the company is unspecified, the overall company ADR is deemed more uncertain. The remaining uncertainty is the uncertainty in the size of loss for a location given that a peril event occurred. For example, a building with a high construction quality would observe lower losses than a building with a lower construction quality at a given location. Characteristics such as construction are not a user-defined input in CoD Pro but are considered in terms of uncertainty. Secondary uncertainty is also impacted by correlation between locations. For example, if a company has

three locations in close proximity, they will all be impacted similarly by the same event. For low severity events, the losses would therefore be lower and for high severity events, the losses would be larger. The resulting distribution of losses is greater than if the buildings were independent of each other, resulting in an increased standard deviation value.

For present-day ADRs, Moody's assets are ranked in the following order from high to low: employees, data centers, offices (Figure 16). This order changes when considering the ADR plus the standard deviation, a measure known as the "Risk Metric," with data centers having the greatest uncertainty in risk. Unlike offices, which are valued based on the headcount per office, neither data centers nor employee homes have any form of exposure value attached, resulting in an extra uncertainty component. Data centers also have the fewest locations and the highest concentration of exposure. The impact of a given peril event therefore has a wider range of potential outcomes. Even when accounting for ADR and uncertainty distribution of its assets, Moody's has found that its financial exposure to climate perils remains very low across all asset types.

Figure 16: Uncertainty bands in forward-looking projections of ADR and risk metric, which incorporates uncertainty across Moody's global portfolio



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

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## METHODOLOGY AND PROCESS

Moody's transition analysis explores the Company's risk exposure resulting from the global shift to a low-carbon economy (see Scenario Analysis Results Summary on p. 16). To that end, Moody's applied the latest NGFS scenarios to stress test the Company's resilience against multiple potential futures (including several net-zero aligned futures), each with varying assumptions on the timing and scope of industry trends and regulatory policies to limit global temperature rise (see Table 10).

The first three selected scenarios (Net Zero 2050, Divergent Net Zero and Delayed Transition) represent those associated with the highest transition risks (i.e., those associated with the most ambitious or disruptive policies to limit climate change), while the NDCs scenario represents a future with low transition risks. This selection allows Moody's to explore the potential upper and lower boundaries of its exposure to these risks and their projected financial impacts. As with Moody's physical risk analyses, transition risks were evaluated across Moody's operations and supply chain and covered short- (2025), medium- (2030) and long-term (2040) time horizons.

Table 10: Transition scenarios evaluated<sup>1</sup>

SCENARIO	DESCRIPTION	OUTCOME
<b>Net Zero 2050</b>	Net Zero 2050 is an ambitious scenario that limits global warming to 1.5°C through stringent climate policies and innovation, to reach net-zero CO <sub>2</sub> emissions around 2050.	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. Transition risks are high.
<b>Divergent Net Zero</b>	Divergent Net Zero reaches net-zero by 2050 but with higher costs compared to Net Zero 2050, due to divergent policies introduced across sectors and a quicker phaseout of fossil fuels. This scenario mimics a situation where the failure to coordinate policy across sectors results in an increased burden on markets, while decarbonization of energy supply and industry is less stringent.	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. Transition risks are the highest of any NGFS scenario.
<b>Delayed Transition</b>	Delayed Transition assumes global annual emissions do not decrease until 2030, new climate policies are not introduced until 2030 and the level of action differs across countries and regions based on current implemented policies. This leads to a "fossil recovery" out of the economic crisis brought by COVID-19. Strong policies are then needed to limit warming to below 2°C and negative emissions are limited.	67% chance of limiting global warming to below 2°C by the end of the century. Transition risks are high.
<b>Nationally Determined Contributions (NDCs)<sup>2</sup></b>	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.	Emissions decline but lead nonetheless to about 2.6°C of warming associated with moderate to severe physical risks. Transition risks are relatively low.
<b>Below 2°C<sup>2</sup></b>	This scenario assumes that climate policies are introduced immediately and become gradually more stringent though not as high as in Net Zero 2050. Net-zero CO <sub>2</sub> emissions are achieved after 2070.	67% chance of limiting global warming to below 2°C. Transition risks are relatively low.
<b>Current Policies<sup>2</sup></b>	Current Policies assumes that only currently implemented policies are preserved. This scenario can help users consider the long-term risks to the economy and financial system if society continues on its current path to a "hot-house world."	Emissions grow until 2080 leading to about 3°C of warming and severe physical risks. Transition risks are minimal.

<sup>1</sup> For a more detailed description of each NGFS scenario and its underlying narrative, see the [NGFS Scenario Portal](#).

<sup>2</sup> These scenarios were applied in the Climate-Adjusted Probability of Default analysis (see Figures 4-6).



## INTERNAL CARBON PRICING

In 2022, Moody's continued to use an internal carbon price for business travel of \$50 per mtCO<sub>2</sub>e, as a means to limit the Company's travel-related GHG emissions and to help fund climate-related initiatives. Moody's will continue to use a shadow price on carbon, a theoretical cost, to evaluate new facility leases on the Company's GHG emissions performance.

### CARBON PRICE MODELING

A key element of transition impact is the potential increase in carbon emissions pricing resulting from regulatory mandates. This change would increase direct operational costs, including those related to energy use, and indirectly increase costs related to the purchase of goods and services.

This analysis explores the possible costs of mandatory carbon pricing and its projected impacts on Moody's business during the transition to a low-carbon future. The Company's modeling accounts for the associated costs of continuing to procure 100% renewable electricity, which remains an ongoing commitment in Moody's pursuit of its science-based targets.

The results of this analysis are presented in Tables 11 and 12. As with previous iterations of transition risk modeling, Moody's determined that carbon pricing does not present a material risk to the Company under the assessed time horizons and climate scenarios.

Moody's direct operations are not emissions-intensive, and as such, the Company's supply chain emissions dominate its GHG inventory and are likely to be more sensitive to carbon pricing impacts. In 2022, Moody's Scope 3 emissions accounted for over 99% of the Company's total emissions. These risks are largely mitigated by Moody's ambitious Decarbonization

Plan and supplier engagement program, which reduces the projected impacts of carbon pricing associated with purchased goods and services.

### CARBON AND RENEWABLE ENERGY PRICING METHODOLOGY

- » Moody's applied three of the latest NGFS low-emissions scenarios, as previously described in Table 11.
- » NGFS Phase III modeling was applied to future carbon prices; NGFS Phase II modeling was applied to future renewable and non-renewable electricity prices.
- » Moody's carbon pricing risk scenario analysis is based on projections of the Company's future GHG emissions, covering Scope 1, 2 and 3 emissions and incorporating the Company's near-term and long-term science-based targets.
- » These models include the expected costs of continuing to procure 100% renewable electricity across the Company's global operations, based on Moody's Analytics' price predictions.



**100%**

renewable electricity across the Company's global operations

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

Table 11 represents the avoided financial costs of carbon pricing due to Moody's emission reduction and renewable energy sourcing targets under each NGFS scenario (as reported in greater detail in Table 10). The avoided financial costs highlighted in Table 11 are 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. The avoided costs highlight the following findings:

- » Independent of the transition scenario, Moody's Decarbonization Plan results in avoided costs and improved financial performance in the long-term relative to a base-case scenario without climate action.
- » Independent of the transition scenario, Moody's is no longer expected to incur additional costs related to the procurement of 100% renewable electricity compared to the price of regular grid electricity. This is a result of the reduced differential in renewable and non-renewable energy prices in the short- and medium-term time horizons. It reflects the continued decrease in the costs of renewable energy sourcing.
- » Under the NGFS Divergent Net Zero scenario, the application of Moody's Decarbonization Plan results in the greatest cost savings due to the rapid increase in carbon pricing inherent to that potential future state.

These results uphold Moody's understanding that maintaining the Company's commitment to procuring 100% renewable energy provides a net financial benefit, progress toward the Company's climate-related targets and the achievement of Moody's stakeholders' expectations.

Table 11: 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)	\$2.8	\$9.7	\$0.0
Medium-term (2030)	\$6.4	\$16.2	\$0.0
Long-term (2040)	\$22.5	\$51.1	\$15.7

Source: Calculations based on NGFS scenario.

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Moody's found that under each transition scenario, while the possible financial impacts varied over time frames, the gross annual cost never exceeded Moody's materiality threshold of generally 5% of EBIT. These results have reinforced the importance of taking early, ambitious action on reducing Moody's value chain emissions and maintaining long-term progress towards net-zero. These modeling outputs continue to guide the Company's climate action strategy.

Table 12: 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>2e</sub>	Gross annual cost of carbon pricing and 100% renewable electricity (million USD)	Cost expressed as % of 2022 EBIT	USD/mtCO <sub>2e</sub>	Gross annual cost of carbon pricing and 100% renewable electricity (million USD)	Cost expressed as % of 2022 EBIT	USD/mtCO <sub>2e</sub>	Gross annual cost of carbon pricing and 100% renewable electricity (million USD)	Cost expressed as % of 2022 EBIT
<b>Short-term (2025)</b>	\$69.7	\$11.5	0.7%	\$244.7	\$37.3	2.1%	\$0.0	\$1.2	0.1%
<b>Medium-term (2030)</b>	\$104.0	\$14.3	0.8%	\$263.1	\$34.1	1.9%	\$0.0	\$1.3	0.1%
<b>Long-term (2040)</b>	\$183.0	\$12.9	0.7%	\$416.5	\$27.8	1.6%	\$127.7	\$9.4	0.5%

Source: Calculations based on NGFS scenario.

<sup>1</sup> Moody's carbon pricing scenario analysis is based upon a projection of its GHG emissions across Scope 1, Scope 2 (market-based) and all reported Scope 3 categories. Future emissions were modeled assuming that the Moody's meets existing Science-based Targets, and maintain a linear reduction trend after the target year and net-zero emissions by 2040. Additionally, future emissions projection assumes continued achievement of 100% renewable electricity use across global portfolio. Simplified assumptions were made, these include assuming that the Company's electricity consumption, across all time-horizons, remains equal to the base year. The cost amounts reported include the gross cost of carbon pricing on its emissions each year, in addition to the scenario dependent cost of renewable electricity procurement for 100% of global operations. 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.



## MOODY'S RISK EXPOSURE THROUGH CUSTOMERS

Moody's 2022 revenue exposure to high-emitting corporate sectors was analyzed by classifying MA corporates and MIS corporate finance customers according to MIS' recently expanded Environmental Heat Maps. Revenue from those customers was analyzed compared to total MA and MIS revenue. The Environmental Heat Maps' qualitative risk scores for each customer sector range from low to very high risk.

The following factors are considered in the MIS Heat Maps' environmental risk scores:

- » Carbon transition.
- » Physical climate risks.
- » Water management.
- » Waste and pollution.
- » Natural capital.

The results of this assessment are presented in Figure 17, and aggregated for the entire Company in Figure 18. In 2022, Moody's found that 16% of its total revenue is associated with corporates from low environmental risk sectors, and 6% of its revenue is associated with corporates from high or very high environmental risk sectors. Of Moody's share of revenue associated with assessed MA corporates and MIS corporate finance customers, a significant majority was derived from low or moderate risk sectors. Tracking and disclosing this data provides Moody's with an enhanced understanding of its climate market risk exposure via customer sectors and will be used to inform future engagement strategies.

Figure 17: Moody's Analytics and Moody's Investors Service 2022 revenue breakdown per environmental risk score

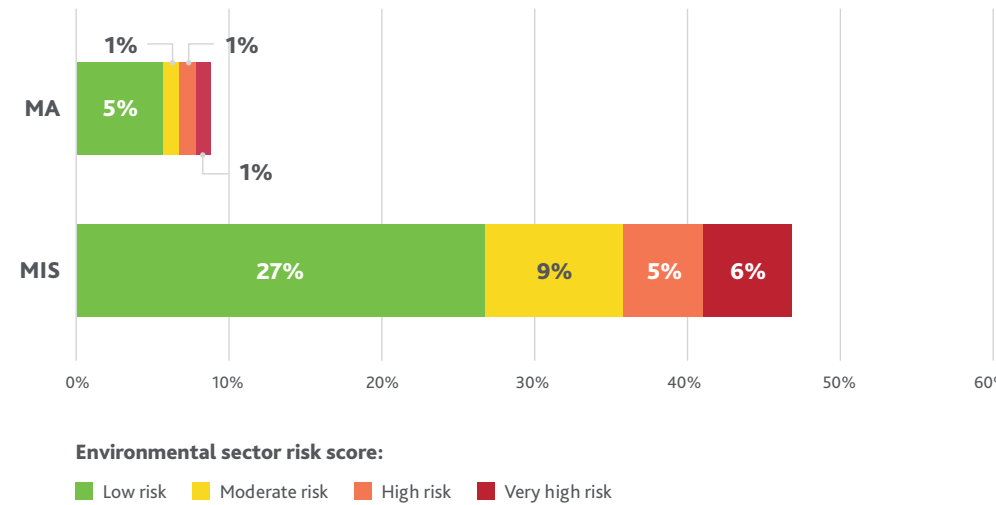
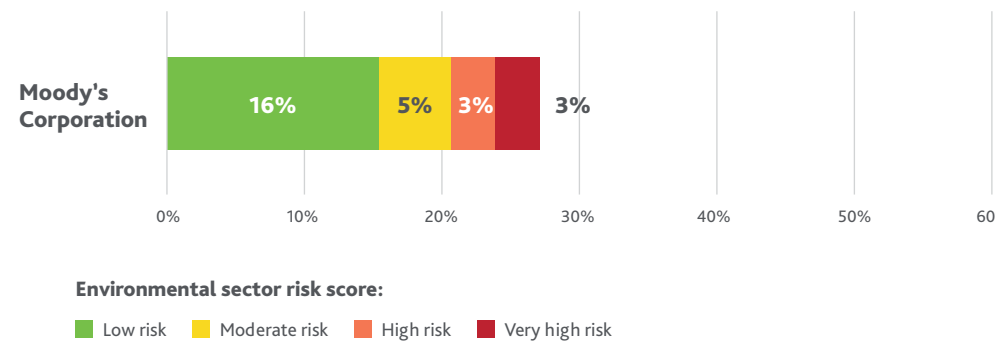


Figure 18: Moody's 2022 revenue breakdown per environmental risk score



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

## CRITICAL SUPPLIER ANALYSIS

Critical suppliers are those who provide fundamental services of strategic importance to Moody's ongoing operations. Supplier scoring was assessed through maturity across each of the following categories:

- » Quality of CDP climate disclosure.
- » Science-based emissions targets.
- » TCFD disclosures.

Moody's associates a higher level of climate maturity with reduced risks of pass-through costs linked to:

- » Carbon pricing.
- » Reduced risk of climate-linked business disruptions within its supply chains.
- » Heightened opportunities for engagement on climate issues including Scope 3 emissions reductions.

The results of the analysis are shown in Table 13. The outcomes of this assessment will be used to further inform Moody's supplier engagement strategy.

Compared to 2021, more suppliers were determined to be of "Low" engagement priority, showing positive progress in climate management, mitigation and preparation. Moody's observed an increase in "Very High" engagement prioritization in 2022, largely due to the expanded coverage of the Critical Supplier Analysis to additional critical suppliers that were observed to be less progressed in their consideration of climate issues.

Table 13: Critical supplier engagement priority results

ENGAGEMENT PRIORITY	% OF CRITICAL SUPPLIERS	CHANGE SINCE 2021
Low – progress on all three categories	17%	+5%
Moderate – progress on two categories	15%	-3%
High – progress on one category	21%	-9%
Very High – no progress in all three categories	47%	+7%

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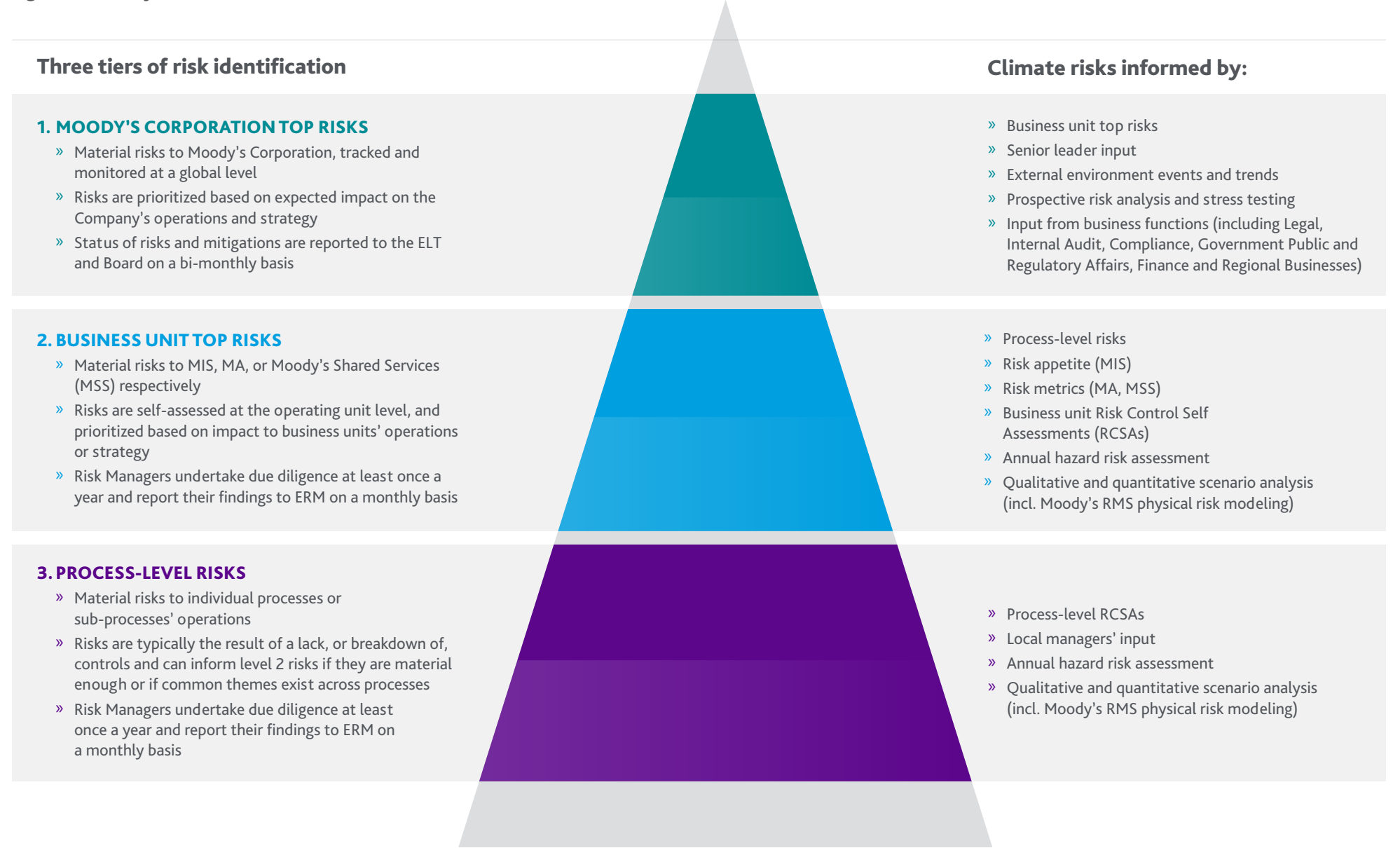
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Moody's embeds climate-risk considerations across its Companywide risk management processes, which are integrated throughout several tiers of the Company's business units and roles. Moody's multipronged approach to risk identification and management provides the Company with a holistic view of relevant risks, incorporating a top-down and bottom-up internal view of Company risks and risks assessed in the global and competitive environment. The ERM function, managed by Moody's Chief Risk Officer (CRO), maintains a register of all existing and identified risks, which is continually monitored and reviewed. All identified physical and transition climate-related risks relate to risk categories recorded within Moody's risk taxonomy, which aids in determining which risks and opportunities could have a substantive impact.

RISK FACTORS ASSESSED
Risk category
Risk size
Boundary of impact
Probability of occurrence
Time horizon(s) of occurrence
Financial or operational implications for Moody's offerings
Mitigating factors and existing controls

## CLIMATE-RELATED RISK IDENTIFICATION AND ASSESSMENT

Figure 19: Moody's three tiers of risk







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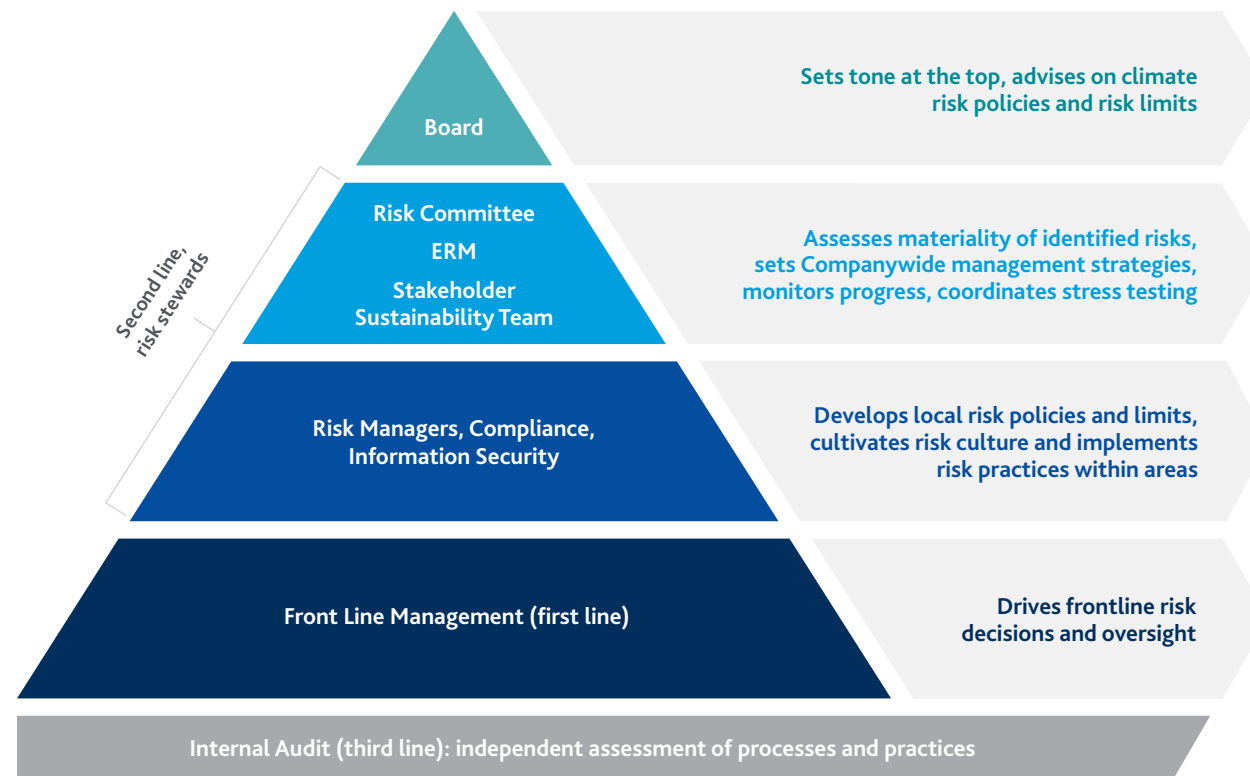
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## CLIMATE-RELATED RISK MANAGEMENT

Figure 20: Three lines of defense – climate risk management



ERM is designed to establish a standard, organization-wide understanding of risk management and define roles and responsibilities based on the 2017 COSO framework. Climate-related risks are integrated throughout Moody's Companywide management process and are overseen by the Stakeholder Sustainability team, which develops recommendations and plans to be implemented. Physical climate risks are managed through ERM, as well as the Crisis Management and Global Business Resiliency teams. Transition climate-related risks are assessed across relevant business functions and are then reviewed by the Stakeholder Sustainability team.

Moody's risk identification, assessment and management approaches are constantly evolving in line with best practices and the emergence of new capabilities. Moody's seeks to maximize the use of data and metrics to understand how risks evolve and compare to internal expectations. Moody's anticipates the integration of additional data and management tools to track risk management insights and enhance the Company's resiliency prioritization in the future.

Moody's Enterprisewide Risk Committee, composed of the CEO and their direct reports, including the CRO, reviews the work of ERM and undertakes regular independent reviews of currently tracked risks. The CRO is responsible for risk management across Moody's, which is structurally independent from the Company's business lines, and provides oversight and monitoring of material risks that have the potential to impact the Company. Any material climate-related risks and mitigating actions are also presented to the ELT and the Board's Audit Committee periodically.

### 2022 CLIMATE RISK MANAGEMENT HIGHLIGHTS

- » Moody's utilized RMS' capabilities to enhance the Company's physical risk scenario modeling for its facilities and operations. Moody's Business Resiliency Plans now provide guidance to employees on issues that may impact their ability to work remotely, such as physical climate risks.
- » Moody's offered different climate and ESG related training courses to its employees, expanding beyond mere compliance to cover climate-related risk scenarios and emergency response. This represented over 9,500 hours of training covering 28% (over 3,500 employees) of Moody's population in 2022.
- » Moody's conducts annual third-party risk assessments for key vendors and scores them from an ESG perspective. Moody's recently expanded its value chain risk analysis to evaluate the climate maturity of a greater number of suppliers.
- » Sourcing Managers are now required to complete a Responsible Sourcing training module with a focus on factoring responsible sourcing metrics into award decisions, including science-based targets.





# Metrics to Assess Climate-related Risks and Opportunities

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## CARBON-ADJUSTED EARNINGS PER SHARE

Moody's has examined the potential impact of carbon pricing on the Company's share price. The Company calculated its 2022 carbon-adjusted diluted earnings per share (EPS) by applying the 2022 costs of carbon pricing as projected by several NGFS transition scenarios, as well as Moody's internal carbon price on business travel. These results are described in Table 14 and summarized below:

- » Mapping the theoretical global carbon prices inherent to each NGFS scenario onto Moody's 2022 emissions was found to have a very low impact on Moody's carbon-adjusted EPS (diluted weighted average shares outstanding), always remaining under 1%.
- » The Delayed Transition scenario does not apply a carbon price in 2022 and therefore has no impact on the Company's EPS.
- » The Net Zero 2050 scenario results in an approximate 0.22% reduction in Moody's actual adjusted diluted EPS. The Divergent Net Zero scenario has the greatest impact with a 0.77% reduction due to the higher carbon prices associated with that scenario.
- » Moody's also mapped the Company's internal carbon price onto business travel, which indicated an increase from 2021, but still resulted in a negligible impact on EPS due to the relatively low business travel emissions generated in 2022.

Table 14: Moody's adjusted 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 2022: 139,231 mtCO <sub>2e</sub>	Total 2022: 139,231 mtCO <sub>2e</sub>	Total 2022: 139,231 mtCO <sub>2e</sub>	Total 2022: 10,300 mtCO <sub>2e</sub>
Carbon price (USD/mtCO <sub>2e</sub> )	\$27.86	\$97.88	\$—	\$50.00
2022 pre-tax cost of carbon (million USD)	\$3.88	\$13.63	\$—	\$0.52
Carbon-adjusted net income (million USD)	\$1,756	\$1,746	\$1,760	\$1,759
Carbon-adjusted net income, net of tax (million USD)	\$1,371	\$1,363	\$1,374	\$1,374
Carbon-adjusted diluted EPS	\$7.42	\$7.38	\$7.44	\$7.44
% reduction from actual	(0.22)%	(0.77)%	—%	(0.03)%

Source: Calculations based on NGFS scenarios.



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## DECOUPLING EMISSIONS FROM FINANCIAL GROWTH

Moody's assessed its Scope 1 and 2 emissions per unit of financial activity and benchmarked this metric against the wider market. In the most recent data, Moody's emissions per asset ratio was 0.28 mtCO<sub>2</sub>e per market asset value, far below the mean value of 38.31 mtCO<sub>2</sub>e per asset for comparable firms across the banking, insurance, finance and professional services sectors. This analysis was conducted through a comparison of the reported Scope 1 and 2 emissions and calculated total market asset value of 741 companies in the aforementioned sectors. This ratio indicates that Moody's direct operations are far less carbon-intensive than other comparable firms and reaffirms the Company's conviction that it can continue to grow without an associated increase in emissions. This ratio also aligns with the conclusions of Moody's carbon pricing modeling (p. 29) which demonstrated that carbon pricing does not pose a material risk to Moody's.

## TRACKING CLIMATE-RELATED METRICS

Energy, waste and GHG emissions are tracked and monitored at a site level. Moody's evaluates consumption trends in order to identify, assess, manage and mitigate climate-related risks related to resource consumption and GHG emissions. A summary of Moody's utility expenditure is found in Table 15. Disruption time and financial impacts caused by major climate-related events are also tracked across Moody's entire portfolio, which informs the Company's resiliency planning.

## MOODY'S UTILITY SPEND

A reversion to pre-pandemic levels of utility spend was observed in 2022; utility expenses rose to more than \$4 million. However, utilities continue to represent a negligible percentage of Moody's operating costs (0.1%). A hypothetical 10% rise in utility and energy prices could raise electricity spend by approximately \$400,000 annually, or 0.01% of 2022 operating costs. This analysis supports the conclusion that Moody's is not sensitive to fluctuations in utility prices.

Table 15: Moody's utility spend<sup>1</sup>

	2019	2021	2022
Utility expenditure (million USD, rounded)	\$5	\$2	\$4
Percent of operating costs	0.2%	0.1%	0.1%



<sup>1</sup> 2021 utility spend data excludes data from Moody's RMS, which was acquired partway through the year.



## SCOPE 1, 2 AND 3 EMISSIONS

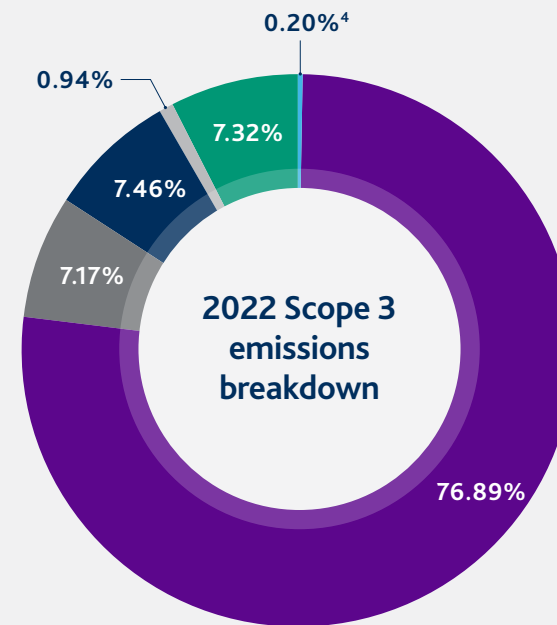
Moody's Scope 1, 2 and 3 emissions from 2019 to 2022 are detailed in Table 16. Emissions have been externally assured and were calculated in accordance with the World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD) GHG Protocol Corporate Accounting and Reporting Standard, SBTi Guidance and the latest SBTi Target Validation Protocol.

In 2022, Moody's Scope 3 emissions increased relative to the previous year. This increase was largely attributed to a post-pandemic resumption of business travel and employee commuting, as well as increased vendor spend and investment. Moody's nevertheless remains on track to meet its science-based targets.

Table 16: GHG inventory breakdown and intensity metrics<sup>1</sup>

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

	2019	2020	2021	2022
<b>Scope 1</b>	1,744	919	851	810
<b>Scope 2 market-based<sup>2</sup></b>	13,591	2,745	432	440
<b>Scope 3</b>	171,260	112,158	121,290	137,981
<b>Purchased goods and services</b>	122,500	86,000	102,900	106,100
<b>Capital goods</b>	5,600	12,200	7,900	9,900
<b>Business travel</b>	23,100	3,300	1,480	10,300
<b>Employee commuting</b>	10,400	3,100	208	1,300
<b>Investments</b>	6,100	6,900	8,500	10,100
<b>Other<sup>3</sup></b>	3,560	658	302	281
<b>Total Scope 1, Scope 2 market-based, Scope 3</b>	<b>186,595</b>	<b>115,822</b>	<b>122,573</b>	<b>139,231</b>



### GHG intensity metrics

	2019	2020	2021	2022
<b>GHG intensity (Scope 1 and Scope 2 mtCO<sub>2</sub>e/sq ft)<sup>5</sup></b>	0.006	0.001	0.001	0.001
<b>GHG intensity (Scope 1 and Scope 2 mtCO<sub>2</sub>e/ \$ million revenue)</b>	3.0	1.0	0.2	0.2
<b>GHG intensity (Scope 3 mtCO<sub>2</sub>e/ headcount)</b>	13	9	9	10
<b>GHG intensity (Scope 3 mtCO<sub>2</sub>e/ \$ million of revenue)</b>	33	20	19	25

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

<b>UPSTREAM TRANSPORTATION AND DISTRIBUTION</b>	Emissions are included in purchased goods and services category
<b>UPSTREAM LEASED ASSETS</b>	Not relevant – All leases included in Scope 1 and 2
<b>DOWNSTREAM TRANSPORTATION AND DISTRIBUTION</b>	Not relevant – Moody's does not distribute or transport products
<b>USE OF SOLD GOODS</b>	Not relevant – Moody's does not produce products that directly consume fuel or energy
<b>END-OF-LIFE TREATMENT OF SOLD PRODUCTS</b>	Not relevant – Moody's does not produce physical products
<b>DOWNSTREAM LEASED ASSETS</b>	Not relevant – Moody's does not own any assets that are leased downstream
<b>FRANCHISES</b>	Not relevant – Moody's does not operate any franchises

<sup>1</sup> 2019, 2020 and 2021 purchased goods and services (Scope 3, Category 1), capital goods (Scope 3, Category 2) and fuel and energy-related activities (Scope 3, Category 3) GHG emissions were restated as a result of a change in methodology and access to improved data.

<sup>2</sup> Scope 2 location-based emissions were as follows: 2022 – 7,696 mtCO<sub>2</sub>e, 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> Other includes fuel and energy-related activities (2022 – 200 mtCO<sub>2</sub>e, 2021 – 230 mtCO<sub>2</sub>e, 2020 – 590 mtCO<sub>2</sub>e and 2019 – 3,100 mtCO<sub>2</sub>e) and waste generated in operations (2022 – 81 mtCO<sub>2</sub>e, 2021 – 72 mtCO<sub>2</sub>e, 2020 – 68 mtCO<sub>2</sub>e and 2019 – 460 mtCO<sub>2</sub>e).

<sup>4</sup> Other includes fuel and energy-related activities (0.14%) and waste generated in operations (0.06%).

<sup>5</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 0.7% of total GHG inventory in 2022.



## MOODY'S ENERGY CONSUMPTION

Moody's total 2022 operational energy consumption increased by nearly 4% compared to the previous year, primarily due to increased electricity usage associated with the post-pandemic resumption of in-office work (see Table 17). However, Moody's energy intensity (on a per-sq ft basis) decreased by 1.7% in that same period. As with previous years, Moody's continued to source 100% renewable energy for its global electricity usage.

## CLIMATE-RELATED TARGETS

In 2022, Moody's progressed its efforts to meet net-zero by 2040 and made substantial headway against the Company's [Decarbonization Plan](#), which includes the Company's science-based targets as well as Moody's commitments to offset remaining emissions from operations, business travel and employee commuting, procuring 100% renewable electricity.

The Company established a long-term, SBTi-validated net-zero target of 90% reduction of Scope 1, 2 and 3 emissions and progressed on near-term targets to reduce GHG emissions ([p. 38](#)).

## 2022 PROGRESS AGAINST THE DECARBONIZATION PLAN

In 2022, Moody's progressed on its Decarbonization Plan in the following areas:

- » Clean and Efficient Operations
  - Procured 100% renewable electricity for global operations for the third consecutive year;
  - Implemented the Workplace of the Future program, which enhances Moody's digital capabilities and IT infrastructure to install a robust hybrid work model that reduces impact from office operations over the long-term. Through this program, Moody's engages with employees on sustainable commuting options and opportunities to keep business travel emissions low;
  - Participated in the Daylight Hour campaign, organized by the Building Energy Exchange, to raise awareness about using natural light instead of electric light; and
  - Launched an implementation plan focused on aligning global office initiatives to Companywide environmental sustainability policy and commitments. Through this plan, implemented various projects to promote energy efficiency across Moody's global real estate portfolio, including:
    - Retrofitting the Company's air conditioning systems;
    - Installing motion-activated light sensors;
    - Cutting off the hot water supply from instant water heaters to reduce energy consumption;
    - Reprogramming office corridor lights to save energy during office hours and to require manual switching at night;
    - Adjusting standard thermostat temperatures to reduce energy consumption; and
    - Expanding Moody's initiative to increase temperature set-points in technology and server rooms.
- » Climate Policy
  - Continued to apply an Internal Carbon Fee of \$50 per CO<sub>2</sub>e on business travel;
  - Continued to apply a shadow price on carbon to evaluate new office leases; and
  - Continued to offset the Company's remaining carbon footprint (including all emissions from operations, business travel and employee commuting) back to 2000, when Moody's became a public company. This includes retrospective offsetting to account for the Company's re-baselined emissions footprint.
- » Supplier Engagement
  - Increased the percentage of supplier spend covered by science-based targets from 28 to 49;
  - Assigned monetary incentives to Procurement's senior management and additional incentives to key purchasers focusing on engagement with key suppliers that do not have science-based targets;
  - Updated key supplier contracts with the requirement to disclose science-based targets;
  - Expanded third-party risk assessments to a greater number of key vendors to evaluate their climate maturity and strategy; and
  - Named a 2022 Supplier Engagement Leader by CDP for the third consecutive year, placing Moody's among the top 8% of companies assessed for supplier engagement on climate.

Table 17: Energy consumption metrics

ENERGY CONSUMPTION	2019	2020	2021	2022
<b>Total energy (MWh)</b>	48,251	32,166	27,969	29,019
<b>Energy intensity ratio per sq ft (kWh/sq ft)<sup>1</sup></b>	19.8	13	11.9	11.7
<b>Scope 1 – direct</b>				
<b>Natural gas (MWh)</b>	5,211	2,886	4,299	3,970
<b>Other direct (diesel, liquefied petroleum gas) (MWh)</b>	918	466	75	238
<b>Scope 2 – indirect</b>				
<b>Total electricity consumption from operations (MWh)</b>	36,477	24,377	20,619	21,406
<b>Renewable electricity use<sup>2</sup></b>	11%	100%	100%	100%
<b>Out of which covered by Energy Attribute Certificates purchased by Moody's directly</b>	—%	84%	87%	87%
<b>Other indirect (purchased steam and cooling) (MWh)</b>	5,645	4,437	2,976	3,405
<b>Electric power intensity ratios</b>				
<b>Electric power intensity ratios per \$ million of revenue</b>	6,926	4,252	3,190	3,915
<b>Electric power intensity ratios per headcount</b>	2,834	1,895	1,532	1,484

<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 0.7% of total GHG inventory in 2022.

<sup>2</sup> Renewable electricity percentage is reported based on originally verified electricity consumption values 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 renewable electricity.

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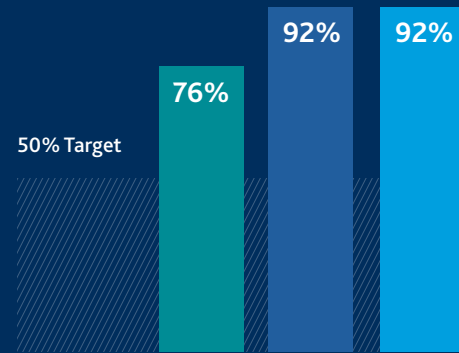


MOODY'S VALIDATED SCIENCE-BASED TARGETS AND PERFORMANCE AGAINST DECARBONIZATION PLAN

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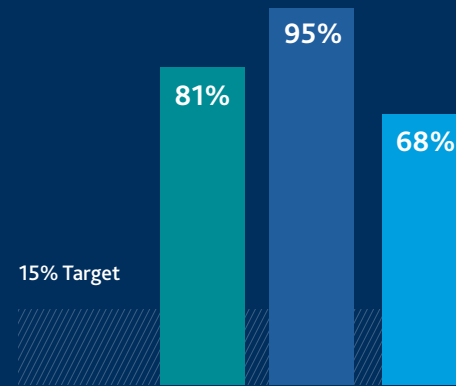
50%

Reduction in absolute Scope 1 and Scope 2 GHG emissions by 2030<sup>1</sup>



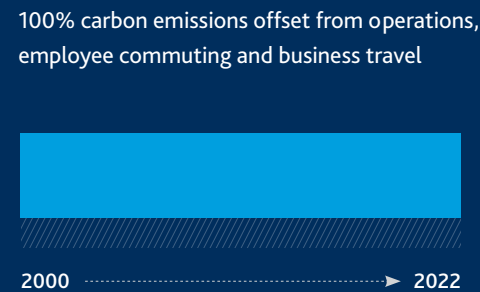
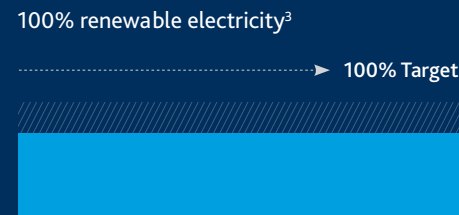
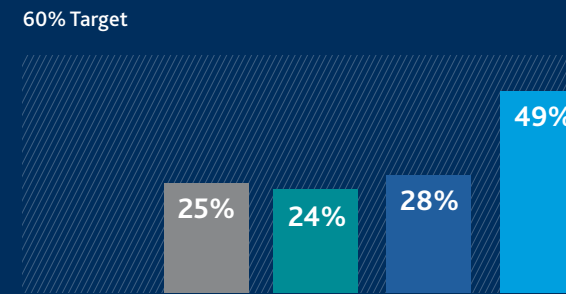
15%

Reduction in Scope 3 GHG emissions from fuel and energy-related activities, business travel and employee commuting by 2025<sup>1,2</sup>



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 emissions by 2040<sup>3</sup>

■ 2019 ■ 2020 ■ 2021 ■ 2022

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.



- » Solar power project (India)
- » Forestation (Brazil)
- » Forestation (Canada)



- » Forestation (U.S.)

Gold Standard<sup>®</sup>

- » Safe water project (Uganda)

<sup>1</sup> From a 2019 base year.

<sup>2</sup> Emissions from fuel and energy-related activities increased due to an increase in emissions factor used in the calculation; emissions from business travel and employee commuting increased due to a post-pandemic resumption of business-related travel and more employees returning to work in the office.

<sup>3</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.



# Priorities for 2023

Moody's will continue to recognize the importance of clear and transparent disclosure on climate-related issues and to raise awareness throughout the organization and along Moody's supply chain to implement energy efficiency measures in line with the Company's Decarbonization Plan and science-based targets.

Moody's will continue to use data and metrics to understand how risks evolve and compare to both internal and external expectations. The Company intends to continue improving business resilience, rolling out updated tools, technical transition risk models and training over the short-term. This will be achieved through the following priorities for 2023, which contribute to Moody's ability to adapt to the unpredictability of the changing climate.

Moody's 2023 priorities build on the Company's net-zero emissions commitments. In 2023, Moody's will:

- » Build on the Company's commitment to achieve net-zero emissions across its operations and value chain by 2040.
- » Continue to monitor the changing regulatory landscape on climate-related disclosures to inform Moody's reporting.
- » Continue to deliver valuable market insights.
- » Continue to expand coverage of Moody's products and services that include climate considerations.
- » Contribute to the development of net-zero standards within the financial industry as part of Moody's involvement in GFANZ.
- » Continue to actively engage with stakeholders on climate-related issues.
- » Strengthen Moody's comprehensive crisis management and disaster recovery processes.
- » Roll out planned initiatives across Moody's real estate portfolio, including energy efficiency.

Moody's ambition is to strengthen its resiliency to climate-related risks, meet market demands for ESG data and insights and continue to deliver on the Company's goal to empower organizations to make better decisions.

# About the Information in This Report

Certain statements in this report are aspirational or otherwise forward-looking statements. These statements are based on management's current expectations and are subject to uncertainty and changes in circumstances. These statements, including statements regarding the goals of Moody's Corporation and its subsidiaries (the "Company"), are not guarantees of future results or occurrences. Actual results and financial conditions may differ materially from the Company's expectations or predictions expressed in this report due to a variety of factors, including, among others, global socio-demographic, political and economic trends, technological innovations, climate-related conditions and weather events, legislative and regulatory changes and other unforeseen events or conditions, and the factors discussed in the precautionary statements included in this report and those contained in the Company's filings with the Securities and Exchange Commission. The forward-looking statements are made as of the date of this report, and the Company undertakes no obligation to publicly supplement, update or revise such statements on a going-forward basis, whether as a result of subsequent developments, changed expectations or otherwise, except as required by law. In addition, while this report describes potential future events that may be significant, the significance of those potential events should not be read as equating to materiality as the concept is used in the Company's filings with the Securities and Exchange Commission.

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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 impact of general economic conditions, including inflation and related monetary policy actions by governments in response to inflation, on worldwide credit markets and economic activity and its effect on the volume of debt and other securities issued in domestic and/or global capital markets; the global impacts of each of the conflict in Ukraine and the COVID-19 pandemic on volatility in world financial markets, on general economic conditions and gross domestic product (GDP) in the U.S. and worldwide, on global relations and on the Company's own operations and personnel; 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, as well as the number of issuances of securities without ratings or

securities which are rated or evaluated by non-traditional parties; 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; the impact of MIS's withdrawal of its credit ratings on Russian entities and of Moody's no longer conducting commercial operations in Russia; concerns in the marketplace affecting Moody's 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 Moody's 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; uncertainty regarding the future relationship between the U.S. and China; the possible loss of key employees and the impact of the global labor environment; failures or malfunctions of Moody's operations and infrastructure; any vulnerabilities to cyber threats or other cybersecurity concerns; the timing and effectiveness of Moody's restructuring programs, such as the 2022-2023 Geolocation Restructuring Program; currency and foreign exchange volatility; 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 Moody's acquisition of RMS, or other business combinations and the ability of Moody's to successfully integrate acquired businesses; 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, 2022, and in other filings made by the Company 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 the Company'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 the Company's business, results of operations and financial condition. New factors may emerge from time to time, and it is not possible for the Company to predict new factors, nor can the Company assess the potential effect of any new factors on it. Forward-looking and other statements in this document may also address Moody's 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.





# Taskforce on Nature-related Financial Disclosures

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The World Economic Forum's recent Global Risk Report ranked biodiversity<sup>1</sup> and nature<sup>2</sup> loss as one of the top ten risks to 2030. The Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES) identified the five direct drivers of nature loss as climate change, changing use of sea and land, direct exploitation of organisms, pollution and invasive non-native species. Biodiversity is essential for sustaining global economies and societies; according to the Organisation for Economic Co-operation and Development (OECD), ecosystem services are worth an estimated \$125-140 trillion per year, or more than one and a half times the size of global GDP.

In recognition of these challenges, the TNFD was established in June 2021, and builds on the 11 recommendations of the TNFD framework. The TNFD recognizes the nexus between natural capital and climate change, and applies the same principles and pillars as TCFD; driving consistency and comparability in sustainability-related reporting. Moody's is a member of the TNFD taskforce, composed of 40 corporate and financial representatives. Moody's has actively participated in a variety of working groups and supported the development of core nature-related data and metrics.

The TNFD framework's overarching principles are designed to ultimately shift global financial flows away from nature-negative outcomes and toward nature-positive outcomes through a consistent and meaningful approach.

Moody's recognizes the systemic risk that loss of nature and biodiversity poses to humanity, and the integral link between climate change and nature loss. According to research from Moody's Investors Service, nine sectors with very high or high inherent exposure to natural capital risk hold \$1.7 trillion in rated debt, more than twice the debt exposure in 2020.<sup>3</sup> In an effort to complement the existing work and leadership Moody's already undertakes on climate, Moody's has produced this position statement in line with the current TNFD recommendations.<sup>4</sup>

Moody's ESG materiality assessment identified nature and biodiversity as an area of strategic focus. Due to the nature of Moody's work, nature and biodiversity do not pose a material risk to the Company (see Scenario Analysis Results Summary on p. 15 for further details). As part of Moody's [Environmental Sustainability Policy](#) and efforts to build a better business, Moody's manages the following areas across the Company's operations:

TIME FRAME	CATEGORY	DESCRIPTION
2022	Waste	Continue to monitor and track the Company's waste outputs.
	Purchasing sustainable materials	Prioritizes eco-friendly stationery and office supplies. Procure eco-friendly office paper or with recycled content for daily business operations.
	Water	Continue to monitor and track the Company's water usage, enabling a better understanding of the Company's impacts and dependencies on water.
2022-2025	Reducing, reusing and recycling waste	Reduce office paper by 50% from 2019 levels through initiatives such as the implementation of secure-print, the reduction of individual printers, and the digitalization of daily business activities.
		Implement centralized waste collection in offices with more than 50 full-time employees.
		Phase out single use plastics from Moody's global operations, where possible.
		Phase out coffee machines with capsules or sachets and/or implement recycling of this packaging, where possible.

<sup>1</sup> The Convention on Biological Diversity (CBD) defines biodiversity as "The variability among living organisms from all sources, including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems."

<sup>2</sup> IPBES defines nature as "The natural world, with an emphasis on the diversity of living organisms (including people) and their interactions among themselves and with their environment."

<sup>3</sup> Source: [https://www.moody.com/research/Environmental-Risks-Global-Sectors-with-heightened-credit-risk-account-for--PBC\\_1339179](https://www.moody.com/research/Environmental-Risks-Global-Sectors-with-heightened-credit-risk-account-for--PBC_1339179).

<sup>4</sup> The TNFD has released four iterations of its beta framework. Moody's references the latest available iteration at the time of this report's publication, Beta v0.4, and the finalized framework is not expected until September 2023.



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## MOODY'S INSIGHTS AND PARTNERSHIPS

Moody's Analytics provides valuable insights and analysis to the wider market. In partnership with Planet, a leading satellite imagery and analytics platform, Moody's incorporates geospatial data across areas such as biodiversity and deforestation into the Company's product and services. This enables Moody's to integrate measures of Company performance on environmental protection, biodiversity and water management within its ESG assessment solutions. Furthermore, for companies in the real estate sector, natural capital risk is integrated within Moody's corporate screenings in recognition of the growing concern around nature-related risks and increasing regulation.

Moody's Investors Service has also assigned ESG scores for more than 10,000 rated entities globally. This includes scores that assess the credit exposure of entities to natural capital risk. Moody's Investors Service also provides SPOs for sustainable debt frameworks and instruments used to finance nature-positive investments. Moody's is also working to support standardized disclosure requirements for the EU SFDR's Principal Adverse Impact Indicator on biodiversity.

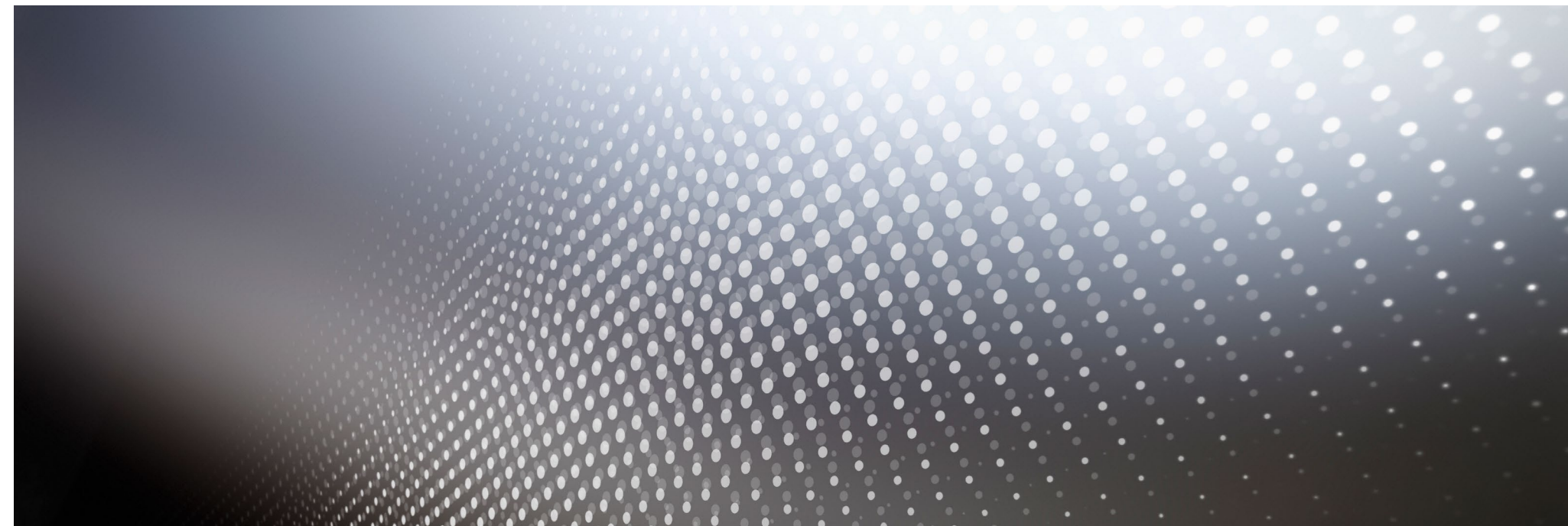
Moody's expects demand for nature- and biodiversity-related products to continue. This demand positions Moody's to continue to deliver on the Company's goal to empower organizations to make better decisions.

## MOODY'S FOUNDATION

One example of the Company's commitment to the sustainable use of nature is Moody's partner, Fundación MarViva. Fundación MarViva is working with artisanal fishing groups to build local capacities for the implementation of participatory fishing monitoring in the Gulf of Nicoya, Costa Rica. Enhanced data collection and analysis will empower community stakeholders to manage the fishery responsibly, and inform fishing best practices and regulations to protect the sustainability of both the marine ecosystem and the coastal livelihoods.

## LOOKING FORWARD

- » Moody's will continue to track water and waste impacts, broadening the Company's understanding of its value chain impacts and dependencies on nature.
- » The Company will further contribute to the delivery of the final TNFD framework, enabling businesses to report at a consistent and comparable level.
- » Moody's recognizes the links between nature and its product offerings, and Moody's will continue to incorporate biodiversity and nature-based considerations within its strategy, operations and products.





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## LRQA Independent Assurance Statement

Relating to Moody's GHG Assertion for the Calendar Year 2022

This Assurance Statement has been prepared for Moody's Corporation (Moody's) in accordance with our contract.

### Terms of Engagement

LRQA was commissioned by Moody's to provide independent assurance of its greenhouse gas (GHG) emissions inventory ("Inventory") for the calendar year 2022 (CY2022), and restated 2019-2022 select Scope 3 categories, against the assurance criteria below to a limited level of assurance and materiality of the professional judgement of the verifier using LRQA's verification procedure and ISO 14064 - Part 3 for greenhouse gas emissions. LRQA's verification procedure is based on current best practise and is in accordance with ISAE 3000 and ISAE 3410.

Our assurance engagement covered Moody's global operations under its financial control and specifically the following requirements:

- Verifying conformance with:
  - Moody's reporting methodologies for the selected datasets.
  - World Resources Institute / World Business Council for Sustainable Development Greenhouse Gas Protocol: A corporate accounting and reporting standard, revised edition (otherwise referred to as the WRI/WBCSD GHG Protocol) for the GHG data<sup>1</sup>.
- Evaluating the accuracy and reliability of data and information for only the selected indicators listed below:
  - Direct (Scope 1), Energy Indirect (Scope 2) and Other Indirect (Scope 3) GHG emissions:
    - Scope 3 GHG emissions verified by LRQA consist of Category 1: Purchased Goods & Services, Category 2: Capital Goods, Category 3: Fuel and Energy Related Activities, Category 5: Waste, Category 6: Business Travel, Category 7: Employee Commuting, and Category 15: Investments;
  - Electricity Used;
  - Supplier Spend with Science-Based Targets;
  - Percent Renewable Energy (Renewable Energy Used and Renewable Energy Credits purchased);
  - Offsets Purchased;
  - UK Scope 1 & Scope 2 emissions; and
  - Restated CY2019, 2020, & 2021 Scope 3 Category 1 Purchased Goods & Services, Category 2: Capital Goods, and Category 3: Fuel and Energy Related Activities.

LRQA's responsibility is only to Moody's. LRQA disclaims any liability or responsibility to others as explained in the end footnote. Moody's responsibility is for collecting, aggregating, analysing and presenting all the data and information within the Inventory and for maintaining effective internal controls over the systems from which the Inventory is derived. Ultimately, the Inventory has been approved by, and remains the responsibility of Moody's.

### LRQA's Opinion

Based on LRQA's approach nothing has come to our attention that would cause us to believe that Moody's has not, in all material respects:

- Met the requirements of the criteria listed above; and
- Disclosed accurate and reliable performance data and information as summarized in Tables 1, 2, and 3 below.

The opinion expressed is formed on the basis of a limited level of assurance<sup>2</sup> and at the materiality of the professional judgement of the verifier.

<sup>1</sup> <http://www.ghgprotocol.org/>

<sup>2</sup> The extent of evidence gathering for a limited assurance engagement is less than for a reasonable assurance engagement. Limited assurance engagements focus on aggregated data rather than physically checking source data at sites. Consequently, the level of assurance obtained in a limited assurance engagement is lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.



Table 1. Summary of Moody's Key Data for CY2022:

Scope of GHG Emissions <sup>1</sup>	Category	Quantity	Unit
Scope 1	Direct	810	MT CO <sub>2</sub> e
Scope 2	Location-based <sup>2</sup>	7,696	MT CO <sub>2</sub> e
	Market-based <sup>2</sup>	440	MT CO <sub>2</sub> e
Scope 3	Category 1: Purchased Goods & Services	106,100	MT CO <sub>2</sub> e
	Category 2: Capital Goods	9,900	MT CO <sub>2</sub> e
	Category 3: Fuel & Energy Related Activities LB	2,500	MT CO <sub>2</sub> e
	Category 3: Fuel & Energy Related Activities MB	200	MT CO <sub>2</sub> e
	Category 5: Waste Generated in Operations	81	MT CO <sub>2</sub> e
	Category 6: Business Travel <sup>3</sup>	10,300	MT CO <sub>2</sub> e
	Category 7: Employee Commuting <sup>4</sup>	1,300	MT CO <sub>2</sub> e
	Category 15: Investments <sup>5</sup>	10,100	MT CO <sub>2</sub> e
<b>Sustainability Metrics</b>		<b>Quantity</b>	<b>Unit</b>
Electricity Used		21,406	MWh
Supplier Spend with Science-Based Targets		49	%
Percent Renewable Energy (Renewable Energy Used + Purchased Renewable Energy Credits (RECs))		100	%
Offsets Purchased for 2022 <sup>6</sup>		12,766	MT CO <sub>2</sub> e
Note 1: GHGs consist of CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub> , and NF <sub>3</sub> .			
Note 2: Scope 2, Location-based (LB) and Scope 2 Market-based (MB) are defined in the WRI/WBCSD GHG Protocol, 2015.			
Note 3: Business travel emissions include Well-to-Tank upstream emissions.			
Note 4: Employee commuting emissions includes Well-to-Tank upstream emissions, does not include Work from Home emissions.			
Note 5: Investments exclude 3% of the total investment dollars in non-consolidated affiliates.			
Note 6: Offsets purchased equal emissions of Scope 1, Scope 2 (Market-based) after RECs applied, Scope 3 Business Travel and Employee Commuting emissions.			

Table 2. Summary of Moody's U.K. Data for CY2022:

Scope of Emissions	Category	Quantity	Unit
Scope 1	Direct	136	MT CO <sub>2</sub> e
Scope 2	Location-based <sup>1</sup>	839	MT CO <sub>2</sub> e
	Market-based <sup>1</sup>	23	MT CO <sub>2</sub> e
Note 1: Scope 2, Location-based (LB) and Scope 2 Market-based (MB) are defined in the WRI/WBCSD GHG Protocol, 2015.			

Table 3. Summary of Moody's Restated Scope 3 Data for CY2019-2021:

Scope of Emissions	Category	2019	2020	2021	Unit
Scope 3	Category 1: Purchased Goods & Services	122,500	86,000	102,900	MT CO <sub>2</sub> e
	Category 2: Capital Goods	5,600	12,200	7,900	MT CO <sub>2</sub> e
	Category 3: Fuel & Energy Related Activities LB <sup>1</sup>	3,100	1,900	2,400	MT CO <sub>2</sub> e
	Category 3: Fuel & Energy Related Activities MB <sup>1</sup>	-	590	230	MT CO <sub>2</sub> e
Note 1: Scope 2, Location-based (LB) and Scope 2 Market-based (MB) are defined in the WRI/WBCSD GHG Protocol, 2015.					



### LRQA's Approach

LRQA's assurance engagements are carried out in accordance with our verification procedure. The following tasks were undertaken as part of the evidence gathering process for this assurance engagement:

- interviewing relevant employees of the organization responsible for managing GHG emissions and sustainability data and records;
- assessing Moody's data management systems to confirm they are designed to prevent significant errors, omissions or mis-statements;
- reviewing estimation methodologies and recalculating GHG emissions; and
- verifying historical GHG emissions and sustainability data and records at an aggregated level for CY2022.

### LRQA's Standards, Competence, and Independence

LRQA implements and maintains a comprehensive management system that meets accreditation requirements for ISO 14065 *Greenhouse gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition* ISO/IEC 17021 *Conformity assessment – Requirements for bodies providing audit and certification of management systems* that are at least as demanding as the requirements of the International Standard on Quality Control 1 and comply with the *Code of Ethics for Professional Accountants* issued by the International Ethics Standards Board for Accountants.

LRQA ensures the selection of appropriately qualified individuals based on their qualifications, training and experience. The outcome of all verification and certification assessments is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent.

Signed

Dated: February 27, 2023

*Kate Pagan*


Kate Pagan  
LRQA Lead Verifier  
On behalf of LRQA, 1330 Enclave Parkway, Suite 200 Houston, TX 77077  
LRQA reference: UQA00002158 / 5800588

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**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):** 6,878 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 (%):** 28%
- **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 =** 2,971 metric tons of CO<sub>2</sub> equivalent

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- **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]:** 2,971 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.

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**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. DeNaghu, Lead Verifier  
Program Manager  
Apex Companies, LLC  
Pleasant Hill, California  
March 14, 2022



John Rohde, Technical Reviewer  
Principal Consultant  
Apex Companies, LLC  
Lakewood, Colorado

*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.*

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**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%



*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



- 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:*

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

December 9, 2021

Trevor A. Donaghu, 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.*



INTRODUCTION

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**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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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. Donaghu, Lead Verifier  
Program Manager  
APEX Companies, LLC  
Pleasant Hill, California

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

December 9, 2021

*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.*

# MOODY'S

To learn more and to contact us, please visit:

[moody's.com/sustainability](https://www.moody's.com/sustainability)

Certain statements in this report are aspirational or otherwise forward-looking statements. These statements are based on management's current expectations and are subject to uncertainty and changes in circumstances. These statements, including statements regarding the goals of Moody's Corporation and its subsidiaries (the "Company"), are not guarantees of future results or occurrences. Actual results and financial condition may differ materially from the Company's expectations or predictions expressed in this report due to a variety of factors, including, among others, global socio-demographic, political and economic trends, technological innovations, climate-related conditions and weather events, legislative and regulatory changes and other unforeseen events or conditions, and the factors discussed in the precautionary statements included in this report and those contained in the Company's filings with the Securities and Exchange Commission. The forward-looking statements are made as of the date of this report, and the Company undertakes no obligation to publicly supplement, update or revise such statements on a going-forward basis, whether as a result of subsequent developments, changed expectations or otherwise, except as required by law. In addition, while this report describes potential future events that may be significant, the significance of those potential events should not be read as equating to materiality as the concept is used in the Company's filings with the Securities and Exchange Commission. Forward-looking and other statements in this report 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.