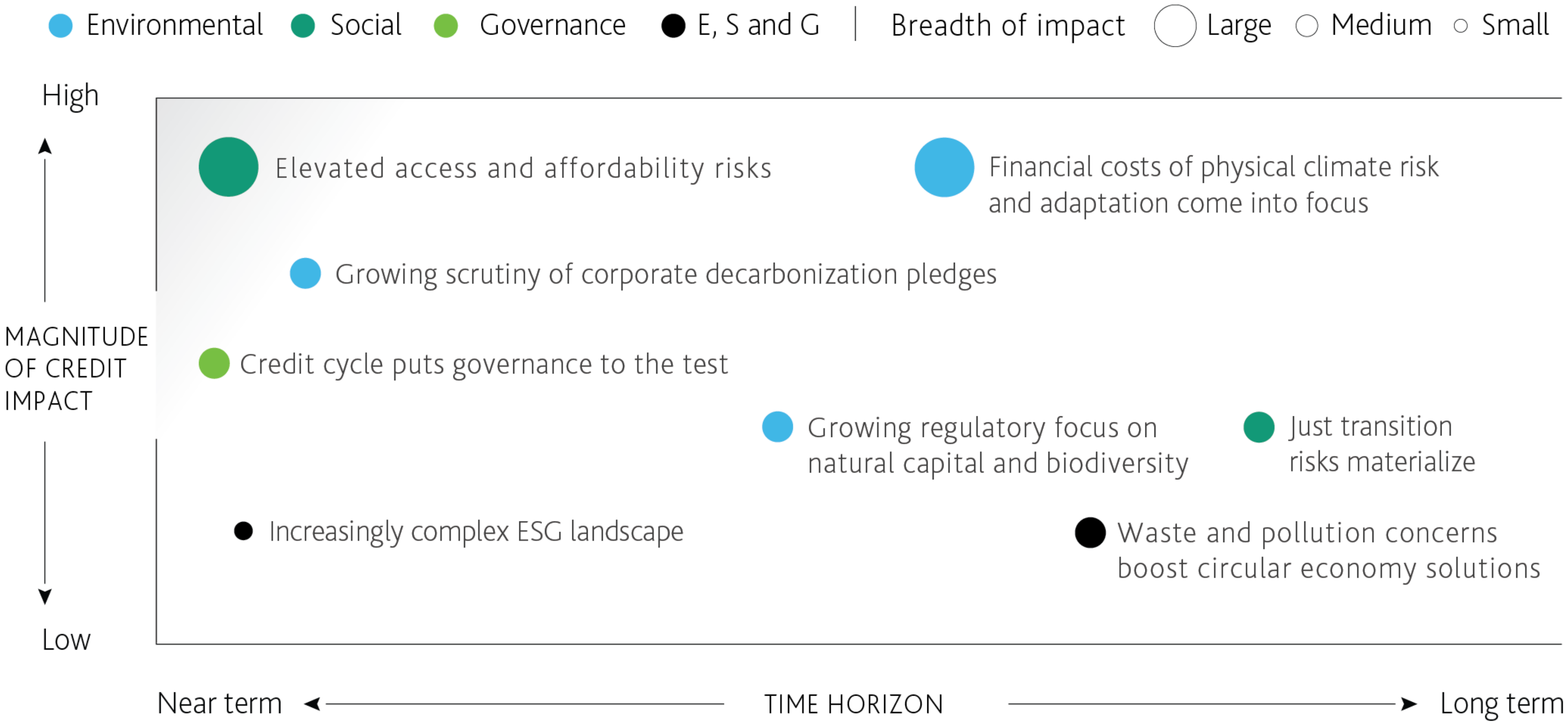
Moody's
INVESTORS SERVICE

2023 Moody's Outlooks

2023 ESG and Sustainable Finance Outlook

January, 2023

Four ESG trends shaping credit quality in 2023 and four more to watch



Time horizon refers to our expectation of when risks are likely to materialize.
Source: ESG – Global: 2023 Outlook – Macroeconomic challenges to exacerbate ESG credit risks, Moody's Investors Service

Sustainable bond market drivers and constraints in 2023

DRIVERS

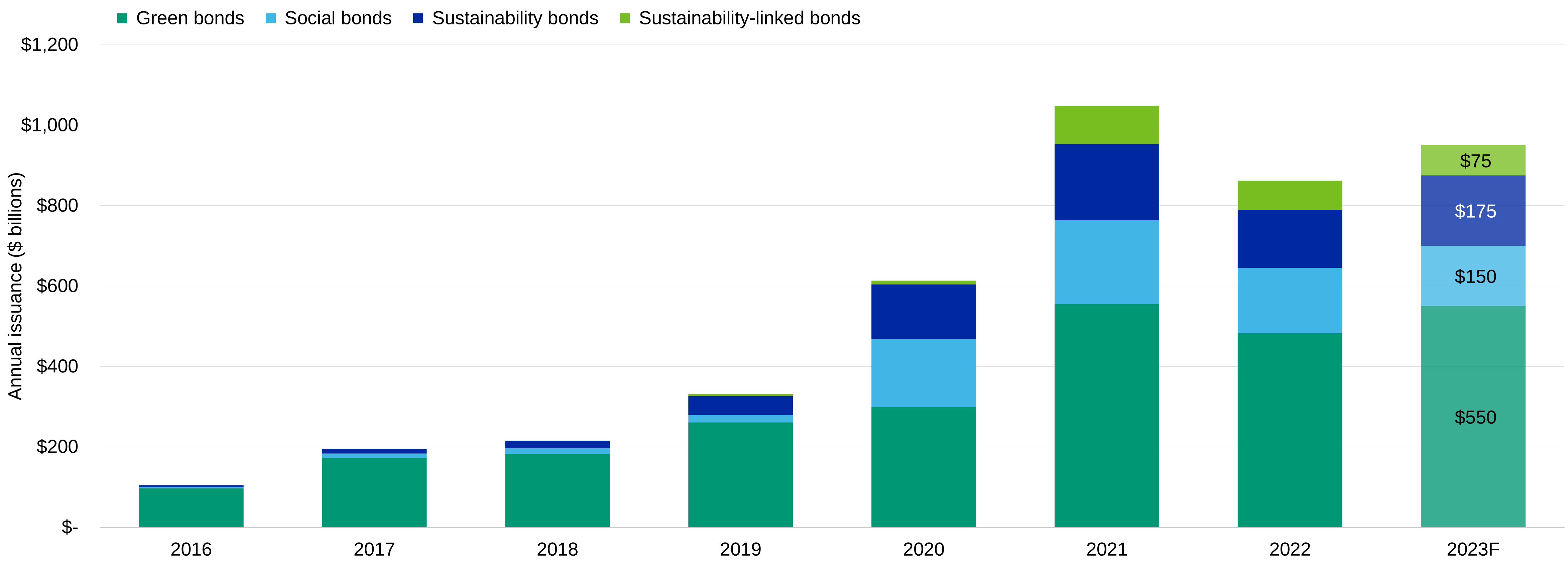
- Financing of decarbonization pledges
- Government spending on sustainable development
- Interplay of environmental and social factors
- Growing pressure to enhance sustainability disclosures
- Post-COP27 focus on blended finance

CONSTRAINTS

- Macroeconomic challenges and rising rates
- Heightened scrutiny of greenwashing
- Complex ESG regulatory and political landscape
- Diminished pandemic-related financing needs

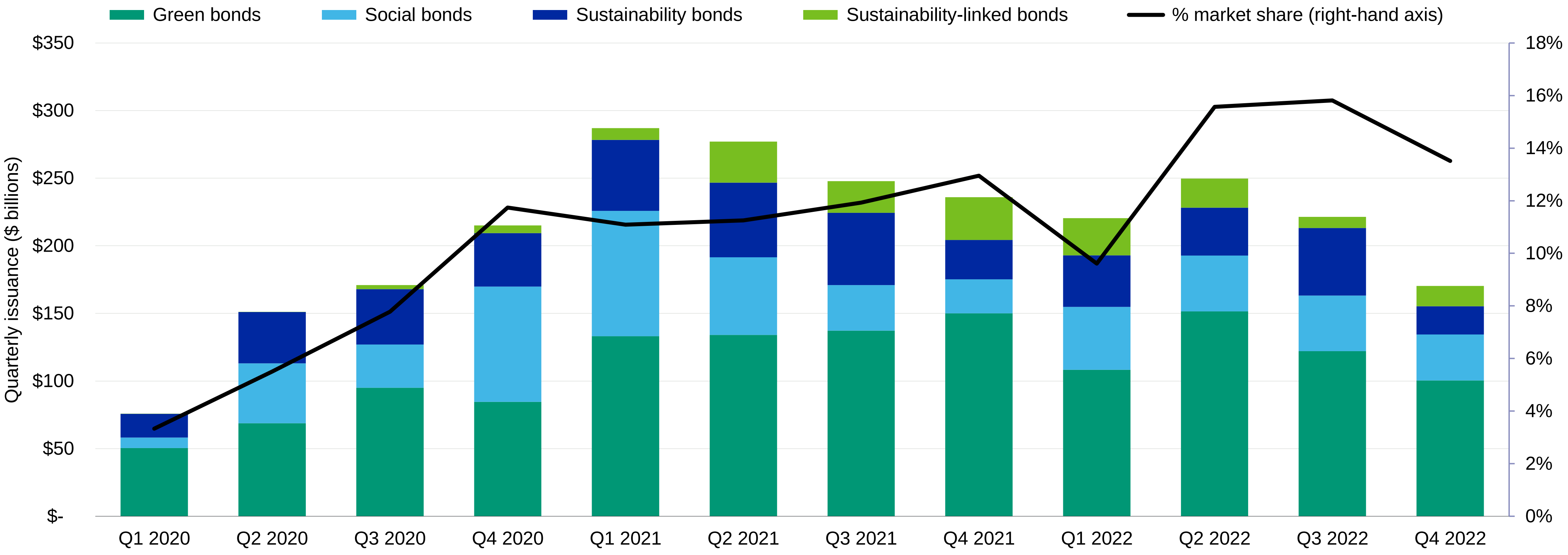
Source: Sustainable Finance- Global: Sustainable bond issuance to rebound 10% in 2023 to $950 billion, short of record high, Moody's Investors Service

Green, social, sustainability and sustainability-linked bond volumes to hit $950 billion in 2023, below peak volumes



2023F represents Moody's Investors Service full-year 2023 forecast.
Sources: Moody's Investors Service and Environmental Finance Data

Sustainable bond quarterly issuance as a share of global bond market decreased in the fourth quarter but above historical levels



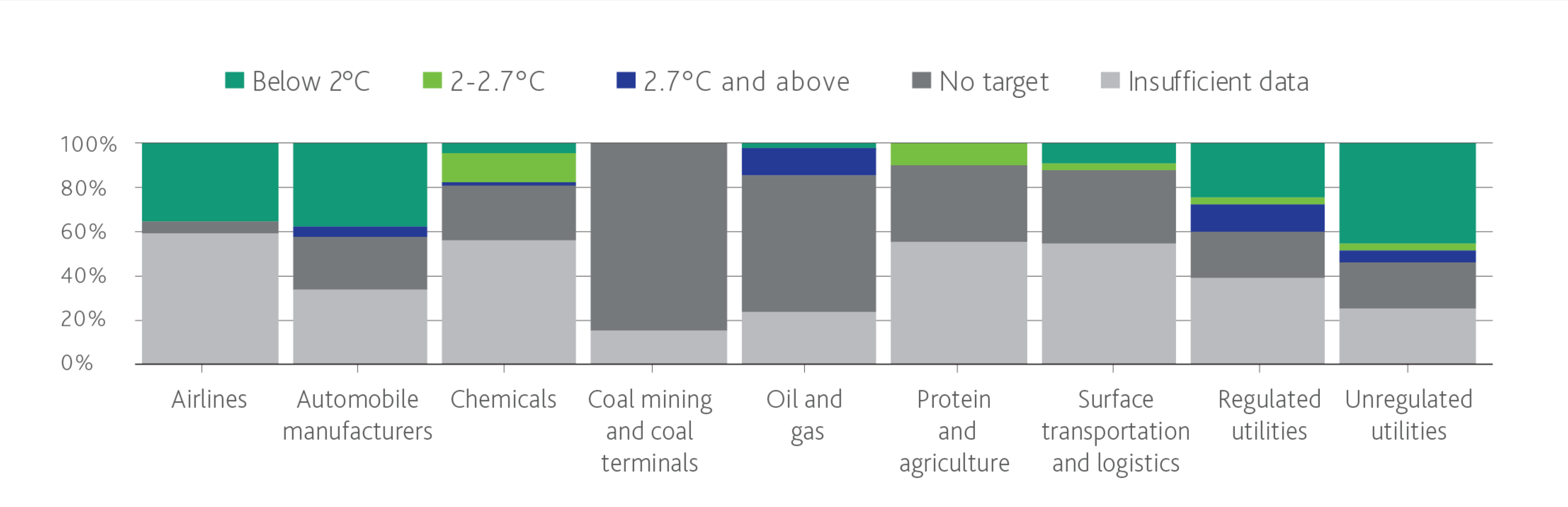
Sources: Moody's Investors Service, Environmental Finance Data and Dealogic

Growing scrutiny of corporate decarbonization pledges

Sectors highly exposed to carbon transition risk will face increasing pressure to follow through on net-zero plans

Prevalence and ambition of company decarbonization targets vary widely by sector

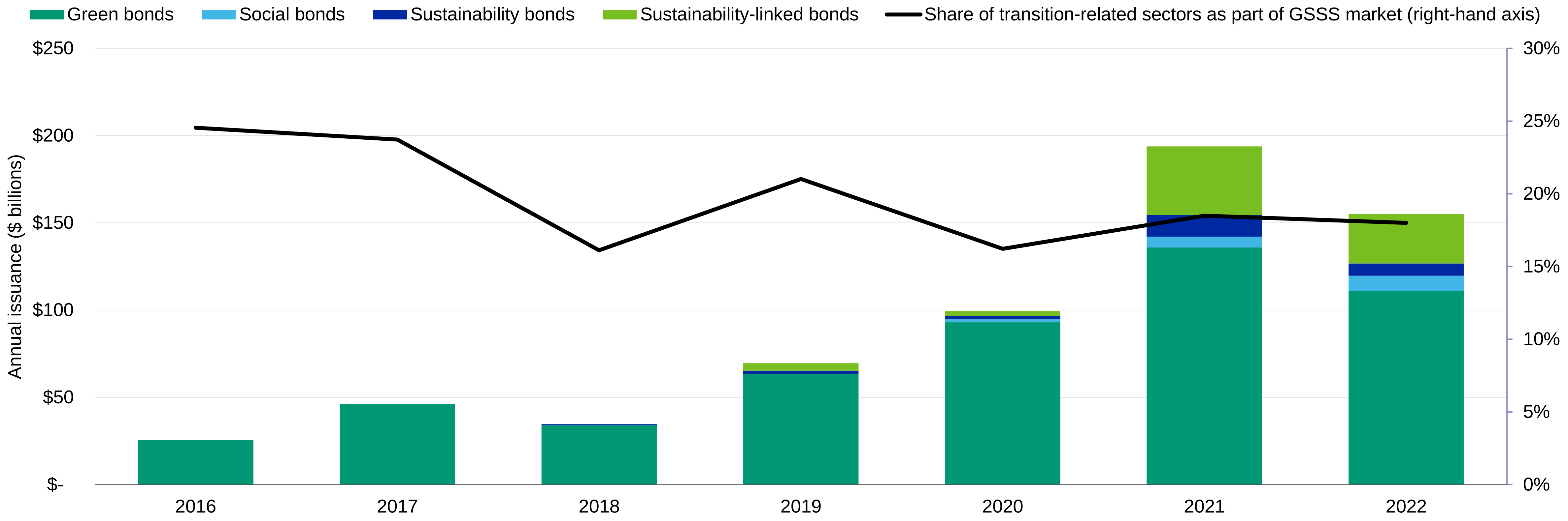
Temperature alignment of company targets by sector for a sample of 1,962 rated publicly listed nonfinancial companies



Temperature Alignment Data as of September 2022. Insufficient data refers to companies with targets that cannot be quantified or do not extend to 2030.
Sources: Moody's Analytics and Moody's Investors Service

Shaper focus on implementation of corporate decarbonization commitments to accelerate transition-related issuance

Annual issuance of sustainable bonds by transition-related sectors



Transition sectors are categorized as those very highly or highly exposed to carbon transition risk as identified by the MIS environmental heat map, including oil and gas, coal mining, chemicals, utilities with generation, automotive, transportation and logistics, steel, agriculture and shipping.

Sources: Moody's Investors Service and Environmental Finance Data

Increasingly complex ESG policy and political landscape

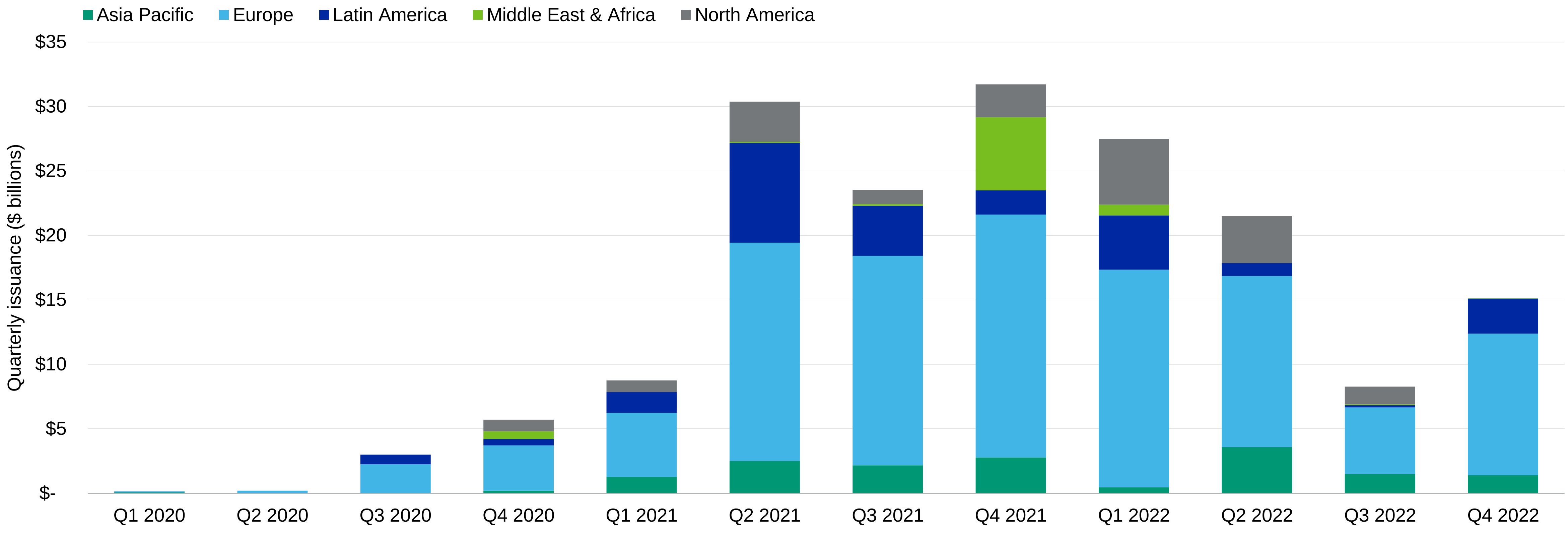
Financial regulators are increasing ESG disclosure requirements and oversight of investing practices

Forthcoming sustainability-related disclosure requirements

Type of regulation	Jurisdictional authority	Affected sectors and implementation dates
Sustainability reporting	■ Chile CMF ■ European Commission ■ (CSRD/ESRS/NFRD) ■ South Korea FSC ■ Japan FSA ■ UK FCA IFRS ISSB	■ Banks, asset managers, insurers, listed companies (Q2 2023) ■ Financial institutions, listed corporates, large non-listed corporates, listed small-medium enterprises, large non-EU companies ■ Listed companies (2025, 2030) ■ Listed companies, financial institutions (Q2 2022, 2024) ■ Asset managers, asset owners, listed and large non-listed companies (H2 2024, to be confirmed) To be determined by implementing jurisdictions (Q4 2022)
Sustainability reporting and investment fund classification	■ US SEC ■ EU ESMA (SFDR) ■ UK FCA	■ Asset managers and investment advisers (Q3 2023) ■ Banks, asset managers, insurers (Q1 2023) ■ Asset manager, asset owners, listed and large non-listed companies (H2 2024, to be confirmed)
Mandatory Taskforce for Climate-related Financial Disclosures (TCFD) reporting	■ Brazil BCB ■ Canada CSA ■ UK FCA ■ Switzerland SFC ■ Singapore MAS ■ Hong Kong SFC ■ Malaysia SC ■ New Zealand ■ India SEBI	■ Banks (Q4 2022) ■ Banks, insurers, private pension plans and listed companies (2024) ■ Largest UK-registered companies and financial institutions (Q2 2022, Q3 2023) ■ Listed companies, financial institutions (Q1 2024) ■ Banks, asset managers, insurers, listed companies (2023 - 2024) ■ Banks, asset managers, listed companies (Q4 2022 - 2025) ■ Banks, insurers (Q1 2024) ■ Banks, asset managers, insurers, listed companies (2023) ■ Listed companies (2023)
Taxonomy alignment	■ EU ESMA ■ UK FCA ■ South Africa Treasury	■ Banks, asset managers, insurers, listed companies (with 500+ employees) (Q1 2022, Q1 2023 and Q1 2024) ■ Banks, asset managers, insurers, listed companies (2024, to be confirmed) ■ Banks, asset managers, asset owners, insurers, issuers and other financial sector participants (2023)
Climate disclosures	■ US SEC ■ IFRS ISSB	■ Listed companies (2024, to be confirmed) ■ To be determined by implementing jurisdictions (Q4 2022)

Sources: Moody's Analytics and Moody's Investors Service

Greater market scrutiny and heightened greenwashing fears may dampen near-term market growth, especially among sustainability-linked bonds



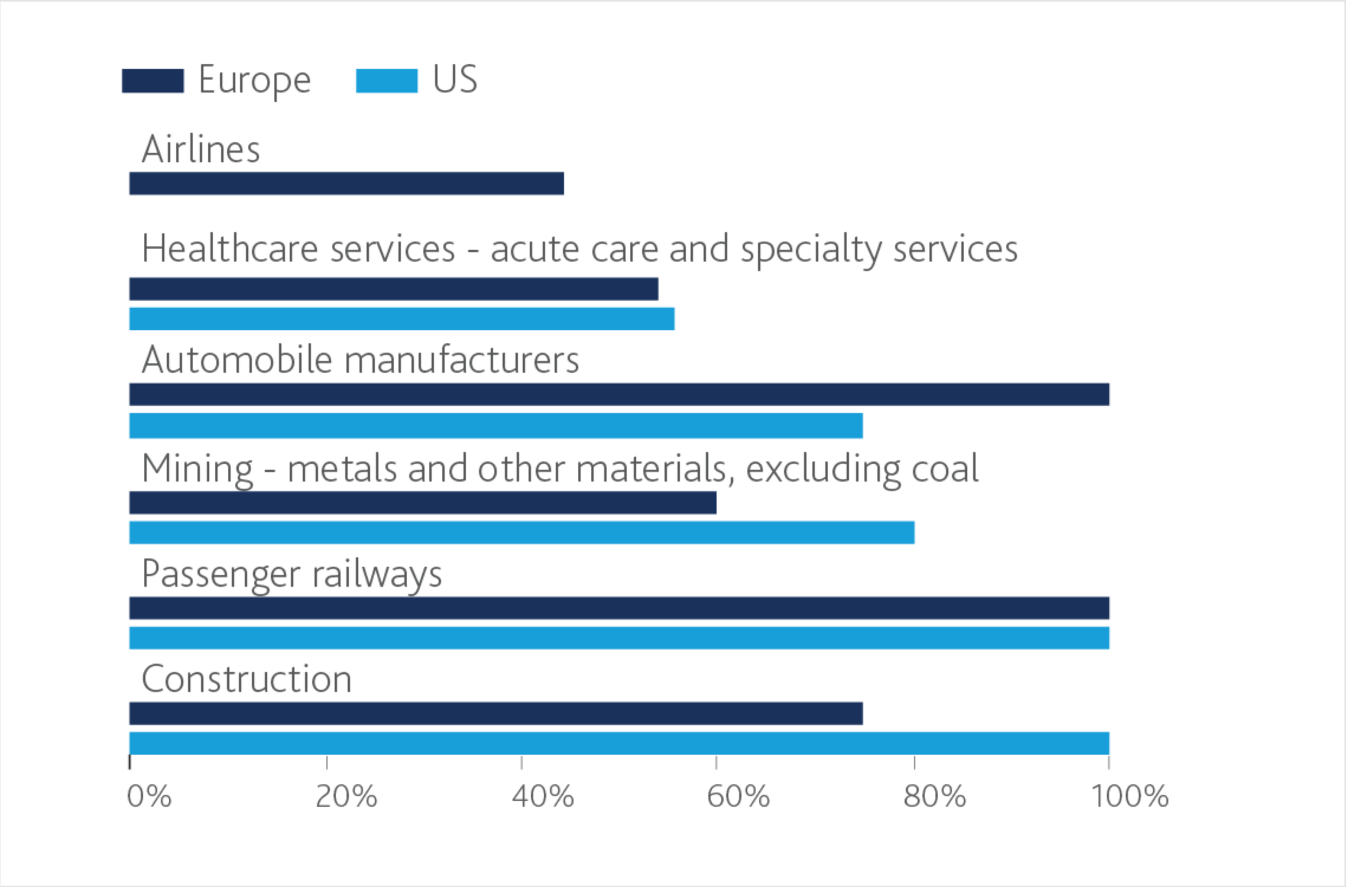
Sources: Moody's Investors Service and Environmental Finance Data

Elevated access and affordability risks

Social risks related to high cost of living will have broad credit impact

Transportation, healthcare and construction sectors in Europe and US highly exposed to human capital risks

Percentage of entities with very highly negative or highly negative exposure to human capital risk



Data as of 28 December 2022
Source: Moody's Investors Service

Four ESG trends to watch in 2023

Financial costs of physical climate risk and adaptation come into focus

EM sovereigns face significant economic and fiscal losses

Sectors that rely on fixed assets face operational, supply chain and market value risks

Just transition risks materialize

Emerging markets are particularly vulnerable to social risks associated with the transition

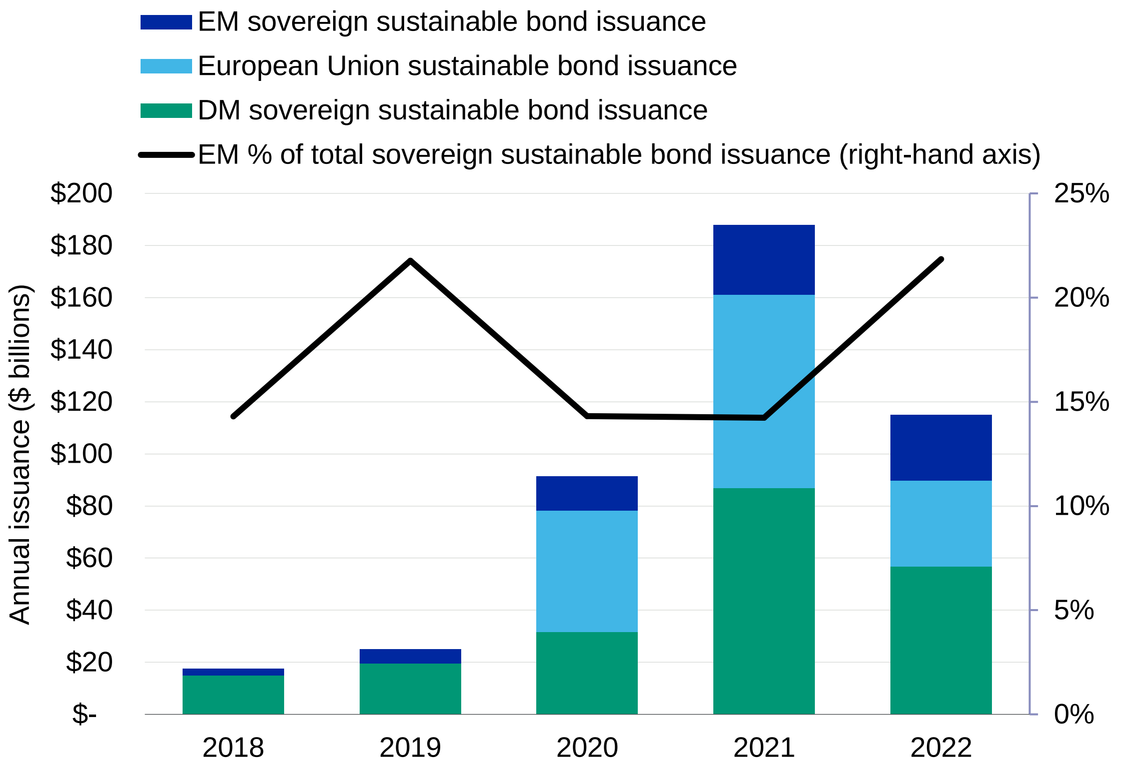
Growing regulatory focus on natural capital and biodiversity

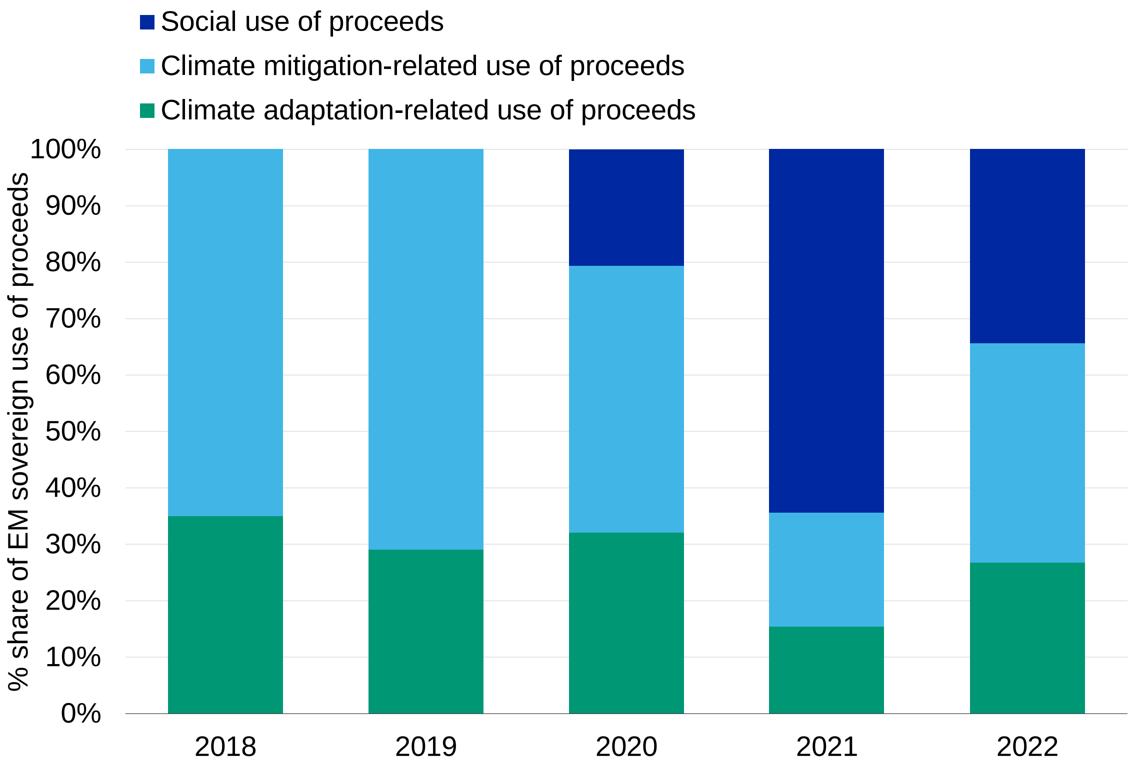
9 sectors with $1.7 trillion in rated debt facing high or very high exposure to natural capital, including building materials, mining and protein and agriculture

Waste and pollution concerns boost circular economy solutions

Packaging, apparel, agriculture, auto manufacturing sectors face increasing pressure to reduce waste and recycle

Public sector issuers, especially in emerging markets, will continue to expand the sustainable bond market and diversify use of proceeds





For purposes of this exhibit, climate mitigation-related use of proceeds include: clean transportation, eco-efficient products, energy efficiency, green buildings and renewable energy. Climate adaptation-related use of proceeds include: climate change adaptation, pollution prevention and control, sustainable management of living natural resources, sustainable water management and terrestrial and aquatic biodiversity conservation.

Sources: Moody's Investors Service and Environmental Finance Data

Thank You

2023 ESG and Sustainable Finance Outlook

Rahul Ghosh
Rahul.Ghosh@moodys.com

Rebecca Karnovitz
Rebecca.Karnovitz@moodys.com

Matt Kuchtyak
Matthew.Kuchtyak@moodys.com

Brendan Sheehan
Bredan.Sheehan@moodys.com

Adriana Cruz Felix
Adriana.Cruzfelix@moodys.com

moodys.com

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on https://ratings.moodys.com for the most updated credit rating action information and rating history