

SECTOR IN-DEPTH

3 February 2020

 Rate this Research

TABLE OF CONTENTS

Sustained growth and diversification in the green, social and sustainability bond markets	2
Emergence of new labels to spur further growth in sustainable finance	6
Innovation in structures will complement the growth of use-of-proceeds bonds	7
Issuers, investors and financial institutions will further sharpen their focus on ESG and sustainability	9
Governmental focus on climate change and sustainability will rise	12
Moody's related publications	14

Analyst Contacts

Matthew Kuchtyak +1.212.553.6930
Analyst
matthew.kuchtyak@moodys.com

Anna Zubets-Anderson +1.212.553.4617
VP-Senior Analyst
anna.zubets-anderson@moodys.com

Sarah Conner +1.212.553.1012
Associate Analyst
sarah.conner@moodys.com

Rahul Ghosh +44.20.7772.1059
SVP - Emerging Markets Rsrch
rahul.ghosh@moodys.com

Andrew Davison +44.20.7772.5552
Senior Vice President
andrew.davison@moodys.com

Brian Cahill +61.2.9270.8105
MD-Asia Pac Corp & Infra Fin
brian.cahill@moodys.com

Sustainable Finance – Global

Green, social and sustainability bond issuance to hit record \$400 billion in 2020

We expect green, social and sustainability bond issuance will hit a combined record of \$400 billion in 2020, up 24% from the previous record of \$323 billion achieved in 2019. Continued growth and diversification of these markets will be accompanied by innovation in new labels and structures, particularly with respect to transition bonds and sustainability-linked bonds and loans. A heightened focus on climate action by governments and the financial sector will drive further growth and innovation. Key themes for 2020 and beyond include:

- » **Sustained growth and diversification in the green, social and sustainability bond markets.** Green bond issuance will reach \$300 billion this year, while social and sustainability bond issuance will reach \$25 billion and \$75 billion, respectively. As the social and sustainability bond markets grow and mature over time, we expect issuance from these segments to become more diversified in terms of sector and region, similar to trends we have seen in the green bond market.
- » **Emergence of new labels to spur further growth in sustainable finance.** Over time, the emergence of new labels for use-of-proceeds bonds will support growth beyond green, social and sustainability bonds. Growth in issuance from alternative sustainability-themed labels, such as transition bonds, may be uneven over the near term, however, due to the current lack of definitional clarity.
- » **Innovation in structures will complement the growth of use-of-proceeds bonds.** A growing focus on organization-wide sustainability, and a preference for the flexibility of general corporate purposes borrowing, will contribute to a focus on sustainability-linked bonds and loans. Sustainability-linked loans surged to \$134 billion globally in 2019 from \$34 billion in 2018.
- » **Issuers, investors and financial institutions will further sharpen their focus on ESG and sustainability.** Market participants across the financial sector are prioritizing the incorporation of ESG considerations and sustainability into their investment decisions and risk management. These forces will continue to accelerate in coming years, supporting further growth and innovation in the sector.
- » **Governmental focus on climate change and sustainability will rise.** Governments and regulators around the world are increasingly focused on providing greater structure and clarity to the sustainable finance market as their focus on climate change and sustainability grows. Policy efforts to date have been most advanced in Europe, but a multitude of initiatives are underway across the globe.

Note on our sources

We use the Climate Bonds Initiative as our primary source for global green bond market data throughout this report. Climate Bonds Initiative data are widely used in the market and include detailed information on green bond transactions across the globe. Our analysis is based on data provided by the Climate Bonds Initiative on January 24, 2020.

Green bond data from the Climate Bonds Initiative include labeled bonds that meet the organization's criteria for inclusion in its dataset. The data exclude issuance that does not conform to the Climate Bonds Initiative's criteria, including bonds with more than 5% of proceeds being allocated to "non-green" uses and bonds potentially financing projects that do not align with Climate Bond Standards.

Moody's is a partner of the organization through its [Climate Bonds Initiative Partners Program](#), supporting the organization's efforts to advance the growth and development of a global market for climate and green bonds that rely on the use of debt capital markets to deliver climate solutions.

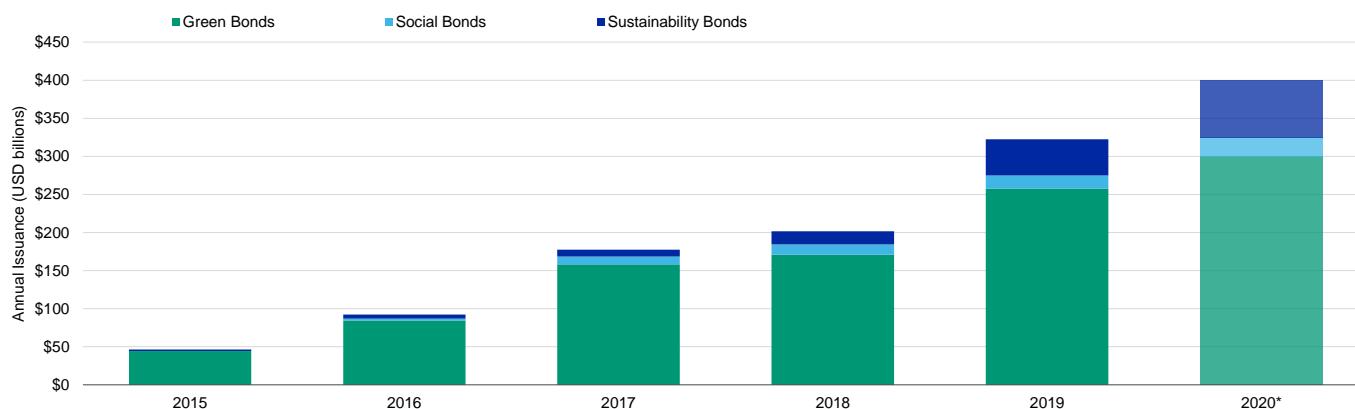
For this report, our primary source for other sustainable debt data – including social bonds, sustainability bonds, green loans and sustainability-linked loans – is Dealogic. We have also used data from Dealogic to calculate overall global bond issuance.

Sustained growth and diversification in the green, social and sustainability bond markets

We expect combined global issuance of labeled green, social and sustainability bonds will hit \$400 billion in 2020, a 24% increase over the \$323 billion issued in 2019 (see Exhibit 1). By individual component, we expect green bond issuance will reach \$300 billion this year, up from \$258 billion in 2019, while social and sustainability bond issuance will reach \$25 billion and \$75 billion, respectively, up from \$17 billion and \$48 billion last year. Labeled green bonds, social bonds and sustainability bonds are "use-of-proceeds" instruments whose proceeds are typically earmarked to finance eligible environmental and social projects.¹

Exhibit 1

Combined global issuance of green, social and sustainability bonds will reach \$400 billion in 2020



*2020 figures reflect Moody's projections

Sources: Moody's Investors Service, Climate Bonds Initiative, Dealogic

Our projected 24% growth in combined issuance would represent a moderation compared with the 60% growth achieved between 2018 and 2019. Our forecast therefore reflects our expectations for a healthy but maturing market, with growing use of new labels and structures, as discussed in other sections of this report. The fastest growth will occur among labeled sustainability bonds, a market segment that has already exhibited rapid growth that likely reflects issuers' desire to highlight their broad sustainability initiatives.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody's.com for the most updated credit rating action information and rating history.

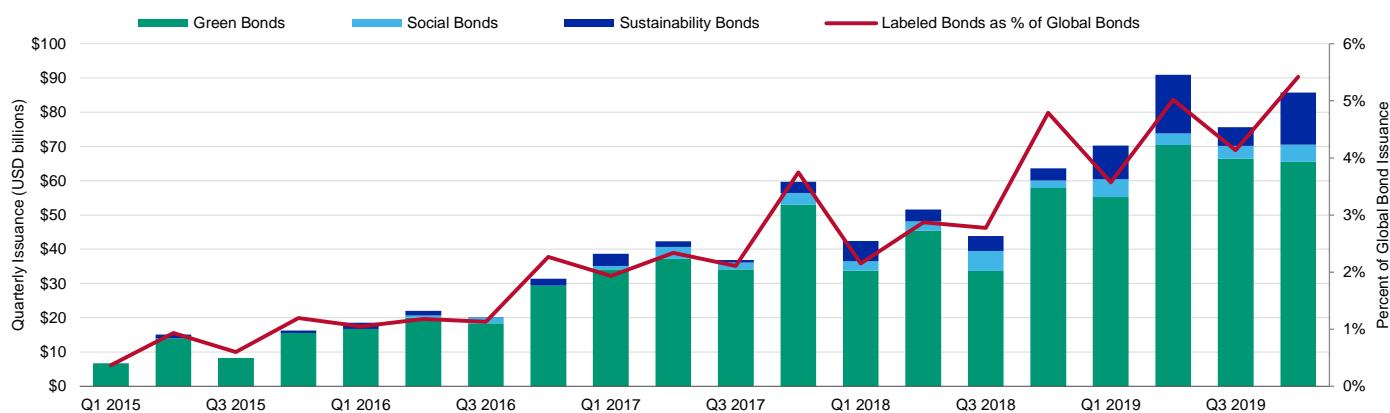
Social bond issuance will also continue to grow, though the label will remain the least utilized of the three given the market's focus on climate and environmental projects, as well as a broader focus on sustainability.

While green, social and sustainability bonds will continue to account for a relatively small portion of global bond volumes, we expect their share of issuance will continue to increase, as it has in recent years (see Exhibit 2). Green, social and sustainability bonds accounted for 4.5% of total global bond issuance in 2019, up from 3% in 2018. The highest-ever share of global issuance came in the fourth quarter of 2019, when combined issuance represented 5.4% of global bonds. With our expected growth in issuance for all three labels in 2020, combined issuance will likely be between 5% and 7% of total global bond issuance this year.

As Exhibit 2 shows, combined fourth-quarter 2019 labeled issuance totaled \$86 billion, the second-highest quarterly amount ever, trailing only the second quarter of 2019. Combined issuance was at least \$70 billion in every quarter of 2019, higher than any single quarter of combined issuance before last year. Consistently strong issuance throughout the year reflected the market's steady growth as issuers continue to use the capital markets to raise awareness and finance their sustainability objectives.

Exhibit 2

Green, social and sustainability bonds approached a combined 5% of global bond issuance in 2019



Sources: Moody's Investors Service, Climate Bonds Initiative, Dealogic

Green bonds continued to demonstrate solid growth in issuance volumes and issuer diversification in 2019, a trend we expect will continue in 2020 as the market continues its march toward maturation and the importance attached to climate mitigation and adaptation activities rises. Issuance of \$258 billion was in line with our \$250 billion forecast, which we had [revised up from \\$200 billion in November](#). Global growth reached 51%, a notably strong increase over the 8% growth between 2017 and 2018. This growth was driven by continued strong volumes by repeat green bond issuers, as well as debut green bonds from a record 285 first-time issuers. Issuers from 51 countries, including supranational issuers, brought green bonds to market, another new record. More than 900 distinct issuers have now issued green bonds since 2007, providing a strong base to support future repeat green bond issuance.

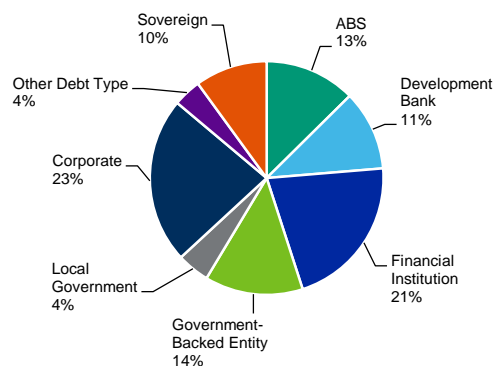
Corporates, both financial and nonfinancial, were the main drivers of green bond issuance in 2019, with a combined \$114 billion accounting for 44% of overall global green bonds (see Exhibit 3). Green bonds from financial institutions grew moderately to \$55 billion from \$50 billion, while nonfinancial corporate issuance doubled to over \$59 billion from \$29 billion in 2018. European issuers accounted for 53% of the total volume among nonfinancial corporates, while North American nonfinancial corporates continue to represent a relatively small part of the market, with \$11 billion in 2019. We expect continued gradual growth in this market segment as high-profile transactions, such as the \$1 billion green bond from [Verizon Communications Inc.](#) (Baa1 positive) issued last February, will encourage other corporate issuers to consider entering the market.

Beyond corporates and financial institutions, four other sectors accounted for at least 10% of global green issuance in 2019, reflecting the market's continued diversification. Government-backed entities registered \$35 billion of issuance (14%), followed by asset-backed securities (ABS) with \$32 billion (13%), development banks with \$29 billion (11%) and sovereigns with \$26 billion (10%).

Exhibit 3

Corporates and financials led 2019 green bond issuance

Percent of 2019 global green bond issuance

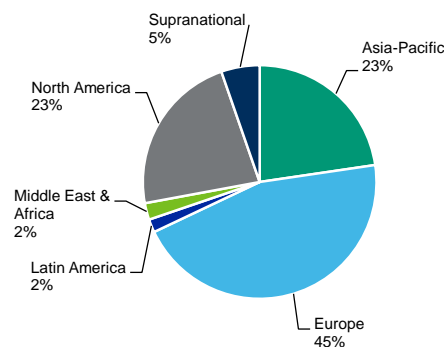


Sources: Moody's Investors Service, Climate Bonds Initiative

Exhibit 4

European issuers accounted for nearly half of 2019 green bonds

Percent of 2019 global green bond issuance



Sources: Moody's Investors Service, Climate Bonds Initiative

ABS transactions are largely comprised of green mortgage-backed securities from [Federal National Mortgage Association](#) (Fannie Mae, Aaa stable), which alone accounted for \$23 billion of issuance in 2019. However, we expect further issuance from other segments of the structured finance sector, [such as covered bonds](#), as innovation continues. For example, [NORD/LB Luxembourg S.A. Covered Bond Bank](#) (Aa2 transaction rating) issued its debut renewable energy covered bond in January 2020, believed to be the first under Luxembourg's *Lettres de gage (LDG) énergies renouvelables* legal framework.²

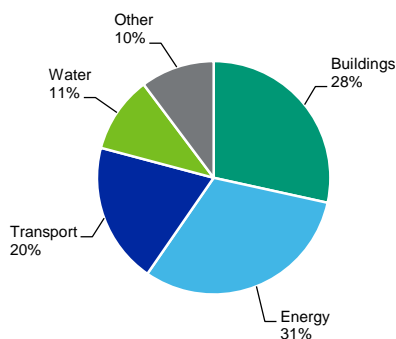
European issuers continued to dominate green bond issuance in 2019, with 45% of global volumes (see Exhibit 4), up from 39% in 2018. North America and Asia-Pacific issuers followed with 23% each. While North America's share of issuance remained steady at this level, the share of issuance by Asia-Pacific issuers fell to 23% in 2019 from 29% in 2018, largely reflecting flat green bond volumes from Chinese issuers. Beyond these three regions, green bond issuance remains scant, though volumes from issuers in Latin America, Africa and the Middle East reached a combined \$11 billion in 2019, well above \$2 billion in 2018. With significant needs for sustainable development throughout emerging markets, we expect continued regional growth and diversification of green bonds.

Energy and building projects continue to dominate green bond use of proceeds, representing a combined 60% of use of proceeds in 2019 (see Exhibit 5), up slightly from a combined 57% in 2018. Transport projects rose to 20% in 2019 from 14% in 2018. Other categories continue to represent a relatively small portion of green bond proceeds, but we believe this will gradually change as new initiatives seek to diversify the types of projects being financed. For example, the Climate Bonds Initiative's launch of the Climate Resilience Principles in September 2019 may contribute to increased financing of climate adaptation and resilience projects.³

Exhibit 5

Energy and buildings continue to dominate green bond use of proceeds

Percent of 2019 global green bond issuance

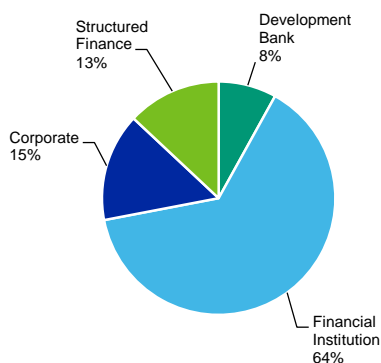


Sources: Moody's Investors Service, Climate Bonds Initiative

In common with green bonds, European issuers and financial and nonfinancial corporates have primarily driven labeled social and sustainability bond issuance. However, there are some notable differences between the different segments of the market.

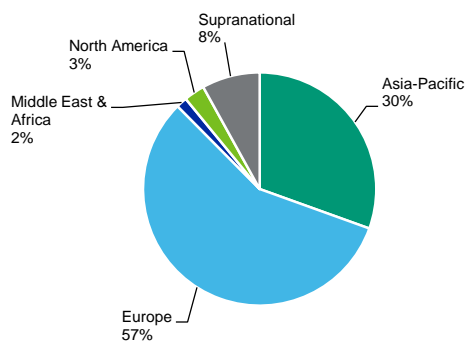
Social bond volumes, for example, have been primarily driven by financial institutions, which accounted for 64% of the \$17 billion global issuance in 2019 (see Exhibit 6), similar to their 61% leading share in 2018. European issuers accounted for 57% of social bond issuance (see Exhibit 7), a greater share than the region had of green bonds. Interestingly, however, issuers from Japan accounted for a leading 25% of social bond issuance by country, significantly higher than their 3% share of green bonds.

Exhibit 6
Financials have issued a majority of social bonds
 Percent of 2019 global social bond issuance



Sources: Moody's Investors Service, Dealogic

Exhibit 7
European issuers led on social bond issuance in 2019
 Percent of 2019 global social bond issuance

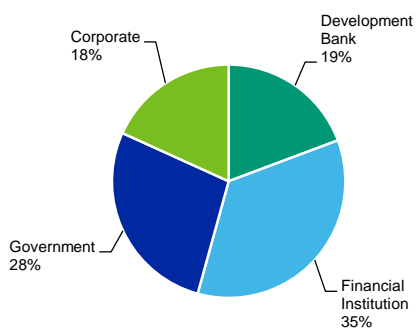


Sources: Moody's Investors Service, Dealogic

The \$48 billion of sustainability bond issuance in 2019 was achieved with a more diverse set of issuers than social bonds in terms of sector and region. Financial institutions led with 35% of global volumes, followed by governmental issuers at 28%, development banks at 19% and nonfinancial corporates at 18% (see Exhibit 8). European issuers led sustainability bond issuance, similar to green bonds and social bonds, but accounted for a smaller share of the market, with 37% of issuance (see Exhibit 9). Korean issuers have been a notable bright spot in sustainability bond issuance, with 11% of global issuance.

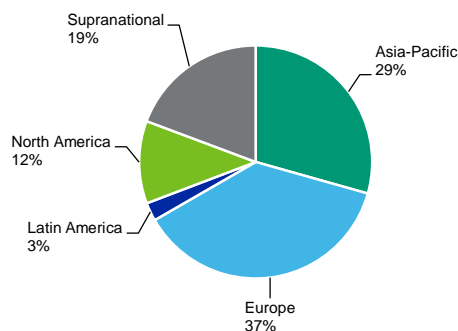
We expect transaction from these segments to become increasingly diversified in terms of sector and region as the social and sustainability bond markets grow and mature, similar to the trend we have observed in the green bond market. Growing numbers of issuers aiming to implement the 17 UN Sustainable Development Goals (SDGs) will contribute to diversification of project types over time as well.

Exhibit 8
Sustainability bond issuance was fairly diverse in 2019
 Percent of 2019 global sustainability bond issuance



Sources: Moody's Investors Service, Dealogic

Exhibit 9
European issuers led regional breakdown of sustainability bonds
 Percent of 2019 global sustainability bond issuance



Sources: Moody's Investors Service, Dealogic

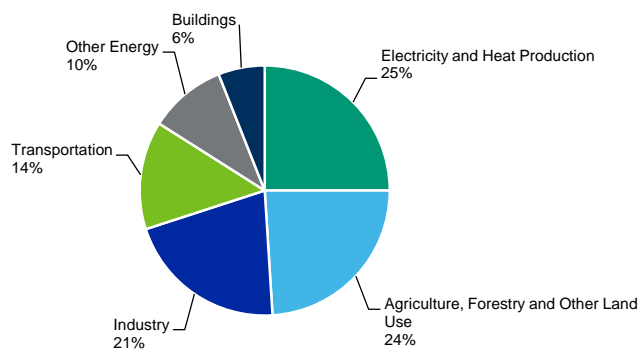
Emergence of new labels to spur further growth in sustainable finance

Continued innovation and the emergence of new labels for use-of-proceeds bonds will support growth in sustainable finance beyond labeled green, social and sustainability bonds, but not without controversy. Achieving the UN SDGs, including deep decarbonization, will require an economy-wide transition that extends beyond business models traditionally viewed as “green.” Alternative sustainability-themed labels, such as transition bonds, may help channel investment toward a broader range of projects that are important to sustainable development. However, based on our conversations with market participants, many have raised concerns about the current lack of clear definitions as to what projects might qualify for this emerging segment of sustainable finance. As a result, we believe that the growth of transition bonds and other labels could be uneven in the near term until there is more definitional clarity, despite the significant market attention.

The latest popular flavor in the labeled bond market has been “transition.” While proposed definitions vary, the common theme is that the proceeds from transition bonds will be used to help carbon-intensive companies become more sustainable over time. Transition bonds may potentially help direct investment toward mitigating the carbon footprint of sectors that account for the bulk of global greenhouse gas emissions (see Exhibit 10). According to the International Energy Association’s Sustainable Development Scenario,⁴ the most immediate and significant opportunities for emissions savings lie in improving energy and materials efficiency in heavy industries, such as the production of cement, iron, steel and aluminum.

Exhibit 10

Global greenhouse gas emissions by sector



Based on global emissions from 2010

Source: United States Environmental Protection Agency, “[Global Greenhouse Gas Emissions Data](#)”

That said, the innovative use of labels by carbon-intensive companies to appeal to sustainability-minded investors has been controversial, given that they may risk prolonging the life of carbon-intensive assets, albeit with short-term efficiency gains. One of the earliest examples sparking debate was Spanish oil and gas company [Repsol S.A.](#) (Baa1 stable), which issued a green bond in May 2017, in part to reduce emissions in its oil and gas network. The issuance resulted in considerable market debate and was excluded from the Climate Bonds Initiative’s green bond database.⁵

In response, new labels have emerged in an attempt to more precisely describe the goals of financed projects. In July 2017, Hong Kong-headquartered [Castle Peak Power Finance Company Limited](#) (A1 stable) issued a \$500 million Energy Transition Bond to finance a natural gas plant.⁶ And in February 2019, Italian natural gas infrastructure company [SNAM S.p.A.](#) (Baa2 stable) issued a €500 million Climate Action Bond, directed to fund investments in biomethane and energy efficiency.⁷

Several proposed definitions of “transition” have emerged in light of this growing innovation by issuers in carbon-intensive sectors. In June 2019, for example, AXA Investment Managers published its Guidelines for Transition Bonds, which argue that transition bonds are intended for carbon-intensive companies that currently do not have sufficient green assets to finance but need funding to reduce their carbon footprint.⁸ Transition was again explored in the process of debating the EU sustainable finance taxonomy. The political agreement reached in December 2019 recognized transition activities as environmentally sustainable, as long as “there are

no economically feasible low-carbon alternatives” and if “they support the transition to a climate-neutral economy.”⁹ In an additional attempt to address the market’s need for clarity on transition bonds, the International Capital Market Association (ICMA) has indicated that it will launch a working group dedicated to climate transition finance.¹⁰

The transition debate can also encompass other issues in addition to carbon emissions and climate risks. As we discussed in a [recent report](#), concerns over natural capital and issuers’ management of resources such as water, land and living things will also increase significantly over the coming years. In July 2019, Brazilian beef producer [Marfrig Global Foods S.A.](#) (B1 stable) announced the issuance of a \$500 million Sustainable Transition Bond, the proceeds of which will be spent on tightening environmental and social standards in supply chains of its beef production.¹¹

We also believe that the emergence of a broader transition category may help direct funds toward emerging market nations, where the funding is often most needed. As highlighted above, the majority of green bond funds have flowed to developed nations, in part because of the greater availability of qualifying projects, while developing countries face a funding gap of \$2.5-3 trillion per year until 2030 to achieve the UN SDGs.¹²

While we believe there will be a primary focus on transition bonds, we see the possibility that other categories for use-of-proceeds bonds will take hold in the coming years. For example, there has been a growing focus on “blue bonds” to finance sustainable marine and fisheries projects, such as the \$15 million transaction issued by the Seychelles in October 2018.¹³ Such transactions may leverage the Sustainable Blue Economy Finance Principles, developed in 2017 through a partnership between the European Commission, the World Wide Fund for Nature (WWF), the Prince of Wales’ International Sustainability Unit and the [European Investment Bank](#) (Aaa stable).¹⁴ Other labels that may attract growing market interest include “gender bonds,” such as that issued by Banistmo in August 2019,¹⁵ and use-of-proceeds “SDG bonds,” such as that issued by [HSBC Holdings plc](#) (A2 negative) in November 2017.¹⁶

Although tightening definitions will lend credibility to these new labels, regulations and standards are unlikely to keep up with the market’s innovation – as aspects of almost every business model can be described in terms of their positive contribution to society. We believe investors will remain increasingly focused on how companies in every sector are aligning their business models with a sustainable, climate-resilient future. This will expand the focus from the specific projects financed by an issuer toward their overall governance and sustainability credentials, which will likely drive innovation in structures and additional reporting requirements, as discussed below.

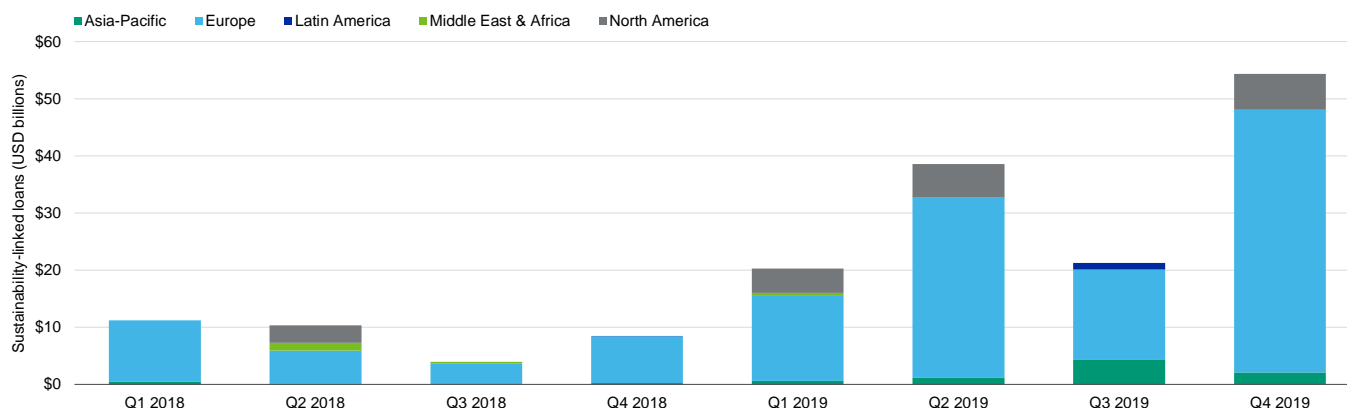
Innovation in structures will complement the growth of use-of-proceeds bonds

Beyond the continued growth and diversification of the green, social and sustainability bond markets, and the emergence of new labels for use-of-proceeds bonds, we expect continued innovation in sustainable financing structures. Sustainable finance options will proliferate as issuers in different industries seek financing solutions that most appropriately fit their operations and organizational structures.

We expect a primary focus will be on sustainability-linked bonds and loans, typically general corporate purposes borrowing structures where the cost of capital can fluctuate based on whether certain sustainability targets, such as the issuer’s ESG score, are achieved. These transactions differ from use-of-proceeds green, social and sustainability bonds, for which issuers commit to segregating and tracking proceeds to finance eligible projects and reporting on their environmental and social impacts.

Investors in the past few years have increasingly focused on the overall sustainability credentials of issuers and how their bond issuances align with their broader sustainability objectives, not just whether the financed projects themselves are sustainable. With this growing focus on organization-wide sustainability, issuers have increasingly included such disclosures in their green, social and sustainability bond frameworks, and have also begun to explore other instruments that allow them to highlight their broader objectives. This has contributed to the rapid rise of sustainability-linked loans, which surged to \$134 billion globally in 2019 from \$34 billion in 2019 (see Exhibit 11).

Exhibit 11

Growth of sustainability-linked loans primarily fueled by European corporates

Sources: Moody's Investors Service, Dealogic

Sustainability-linked loan growth has been primarily fueled by European issuers, which accounted for over 80% of such loans in 2019. Companies from France, Spain and the Netherlands have been the leaders, with nearly half of all loans combined. Nonfinancial corporates have been the engine of sustainability-linked loan growth from a sectoral perspective, accounting for 88% of volumes last year. Sustainability-linked loan volumes typically reflect the full value of revolving credit facilities, with 84% of volumes driven by such facilities and only 16% in the form of term loans. Consequently, we believe that the volumes of debt outstanding under these facilities are significantly lower than the data suggest.

Sustainability-linked bonds will complement, not constrain, the growth of use-of-proceeds bonds

[ENEL S.p.A.'s](#) (Enel, Baa2 positive) General Purpose Sustainable Development Goal (SDG)-Linked Bonds, issued last year, represented the first sustainability-linked bonds globally, following the rise of the sustainability-linked loan market. Enel's SDG-linked bonds, whose sustainability targets include the company's expansion of renewable energy capacity and reduction in greenhouse gas emissions, feature a potential coupon step-up if certain sustainability targets are not achieved.

We expect such transactions to grow in number as issuers seek to highlight the sustainability credentials and targets of their entire organizations, including [alignment with the UN SDGs](#),¹⁷ while maintaining flexible use of proceeds. Enel, which had previously issued a combined €3.5 billion of labeled green bonds during 2017-19, has indicated that it will discontinue its green bond program and focus solely on sustainability-linked issuances.¹⁸

In addition to tying cost of capital to sustainability objectives, sustainability-linked bonds and loans allow issuers to retain the flexibility of general corporate purposes borrowing, a feature that appears to be driving their popularity. These instruments typically eliminate the need to manage proceeds in a separate account and track the status of individual projects, a key tenet of the use-of-proceeds green, social and sustainability bond markets. This flexibility may be appealing from a treasury management perspective, but it could limit transparency, with fewer or less granular disclosures as to how the funds have been spent and what environmental and social benefits the financed projects have achieved.

These different characteristics mean that we expect the growth of the sustainability-linked bond and loan markets to complement, rather than restrict, the growth of the labeled use-of-proceeds bond markets over the next few years. The current scale and impressive growth of the green, social and sustainability bond markets have been supported by increasing issuer and investor understanding of these instruments and a proliferation of national and international standards, as well as the growing number and larger size of dedicated investor funds.

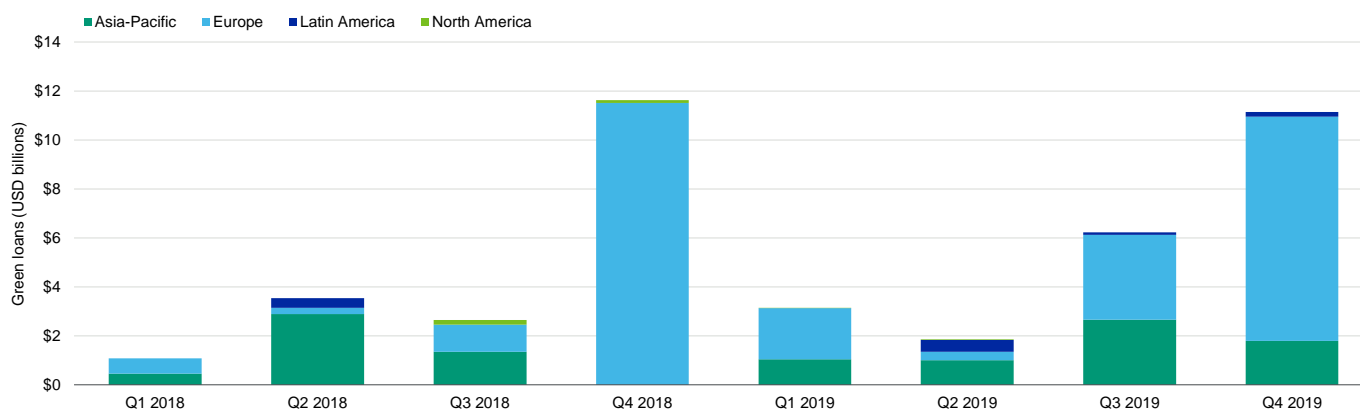
The lack of clear definitions as to what constitutes a robust set of sustainability targets to which issuers and their lenders can tie cost of capital is one potential challenge to the growth of the sustainability-linked loan and bond markets. Some initiatives have already been launched to help maintain market integrity, and we anticipate that these will continue to evolve over time. In March 2019, for example, the Loan Market Association (LMA), in conjunction with the Loan Syndications and Trading Association (LSTA) and the Asia-Pacific

Loan Market Association (APLMA), published the Sustainability-Linked Loan Principles, which include guidelines on the relationship of such loans to the borrower's overall corporate social responsibility (CSR) strategy, target setting, reporting and review.¹⁹ And in January 2020, ICMA announced that it had established a Working Group on sustainability/KPI-linked bonds.²⁰

Other structures beyond sustainability-linked instruments will likely also grow over time. Green loans, typically issued in accordance with the Green Loan Principles,²¹ have seen modest growth over the past couple of years (see Exhibit 12), but remain smaller in number and volume than sustainability-linked loans. In 2019, \$22 billion of global green loans came primarily from European issuers, with 67% of the total. Nonfinancial corporates accounted for 64% and financial institutions the remainder. Unlike sustainability-linked loans, green loans have primarily been issued in the form of term loans, with 83% of last year's volume coming in that format compared with only 17% in the form of revolving credit facilities.

Exhibit 12

Green loan volumes have been driven by European companies



Sources: Moody's Investors Service, Dealogic

Additional innovations are possible, as suggested by other ideas that market participants have floated. In December 2019, reports suggested that the [Government of Denmark](#) (Aaa stable) is working on a green bond structure that would "strip" the green commitment from the bond, effectively resulting in (1) a regular sovereign bond, and (2) a certificate related to the government's commitment to finance green projects.²² Another potential sovereign development comes from the [Government of Germany](#) (Aaa stable), with reports of an idea for the country to issue a 2% interest climate bond in the form of citizens' bond, issued through a special purpose vehicle.²³

Technological innovation may also play a role in the structural innovation in sustainable finance instruments. In a September 2019 report, HSBC and the Sustainable Digital Finance Alliance recommended actions that could be undertaken to leverage blockchain/distributed ledger technology to support the growth of sustainable bonds.²⁴ In an example from February 2019, [Banco Bilbao Vizcaya Argentaria, S.A.](#) (BBVA, A3 stable senior unsecured rating) issued a €35 million private placement structured green bond using blockchain technology.²⁵

Issuers, investors and financial institutions will further sharpen their focus on ESG and sustainability

Market participants across the financial sector are prioritizing the incorporation of ESG considerations and sustainability into their investment decision-making and risk management processes. Issuers are sharpening their focus on highlighting their sustainability objectives and initiatives guiding their disclosure practices and how they interact with the capital markets. Investors are responding to evolving risks, governmental regulations and client demands to increasingly integrate ESG into their investment processes and launch sustainability-focused funds, while banks are beginning to examine their underwriting and investment practices to reflect sustainability criteria. These forces will continue to accelerate in the coming years, supporting further growth and innovation in the sector.

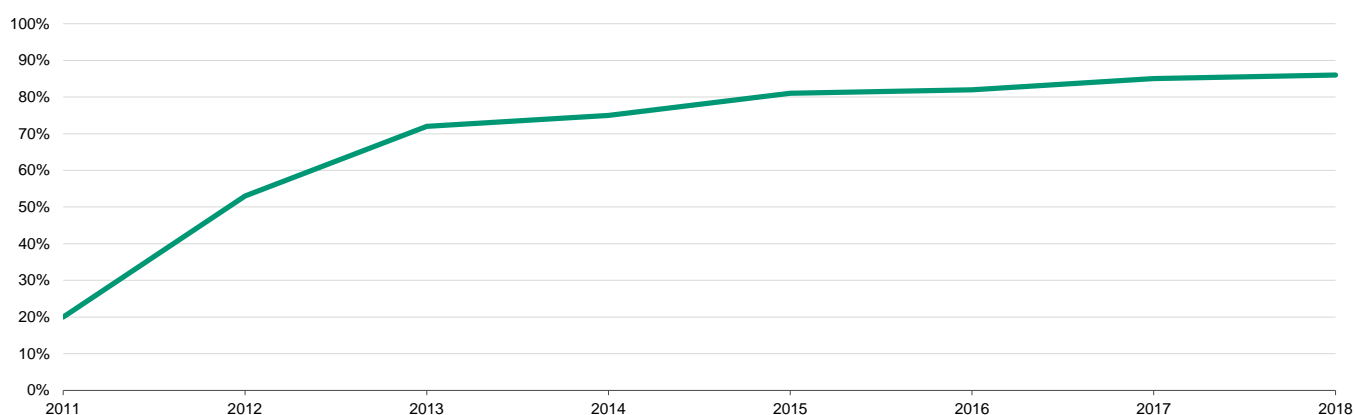
Issuer focus on sustainability has accelerated in recent years, a trend we expect will continue in 2020 and beyond. In August 2019, the Business Roundtable released a Statement on the Purpose of the Corporation signed by 181 CEOs, in which it asserted that businesses

share a commitment to deliver value to all their stakeholders.²⁶ The Business Roundtable commitments extend well beyond building value for shareholders, and include such goals as fair pay, diversity and inclusion, environmental sustainability and community support. Since 1997, the Business Roundtable had endorsed shareholder primacy.²⁷

The statement comes at a time when companies are beginning to change how they assess, measure and communicate their performance. The number of companies publishing sustainability reports has been increasing, from a mere 20% of S&P 500 companies in 2011 to 86% in 2018 (see Exhibit 13).²⁸ Business leaders are managing their companies' reputations in response to pressure from their stakeholders – including their employees, shareholders and consumers – to demonstrate responsible business practices. According to Deloitte's quarterly CFO survey, for example, employees, customers, boards and investors were the leading sources of pressure on businesses to manage their impact on climate.²⁹

Exhibit 13

Number of companies publishing corporate sustainability reports steadily increasing Percent of S&P 500 companies



Source: Governance & Accountability Institute

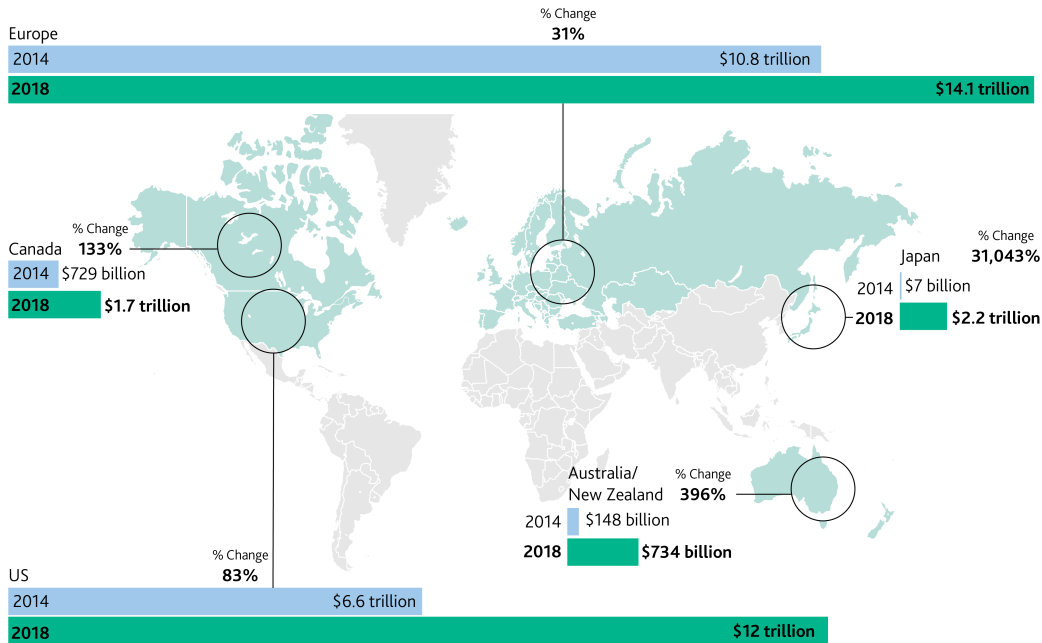
Issuers are also responding to a heightened focus on ESG and sustainability from investors. Asset owners and asset managers are increasingly focused on these areas in response to evolving risks such as climate change and carbon transition, and heightened governmental regulation, as well as growing demand from clients to incorporate these considerations into their investment products.

More than 2,600 investors worldwide have now adopted the UN Principles for Responsible Investment (PRI), with assets under management from signatories totaling \$89 trillion.³⁰ Growth in UN PRI signatories has translated into increased assets under management directly incorporating ESG or sustainability into their investment processes. According to data from the Global Sustainable Investment Alliance, assets under management in some way utilizing sustainable, responsible and impact (SRI) investing strategies stood at \$30.7 trillion globally at the start of 2018, a 68% increase compared with four years earlier (see Exhibit 14).³¹ Dedicated sustainability funds also continue to grow strongly, with the total net assets of mutual funds and exchange-traded funds (ETFs) reaching \$1.6 trillion at the end of 2019, up from \$113.5 billion the previous decade.³²

Another investor initiative gaining traction is Climate Action 100+, launched in December 2017 at the One Planet Summit, which is focused on encouraging the world's largest corporate greenhouse gas emitters to take action on climate change. To date, over 370 investors with more than \$35 trillion in assets under management have signed on to this initiative.³³

A growing number of investment firms have made public announcements about their intentions to increasingly integrate ESG and sustainability into their investment processes. Most notably, [BlackRock, Inc.](#) (Aa3 stable) [released two letters in January 2020](#) arguing for the centrality of ESG investment considerations in all aspects of its money management business. These statements from the world's largest asset manager have attracted significant attention and will inevitably fuel the continued focus on ESG and sustainability among the investor community.


Exhibit 14
Sustainable investment assets under management continue to grow globally
 Global SRI assets by region, \$ trillion and % change



Sources: Global Sustainable Investment Alliance, Moody's Investors Service

Banks are also heightening their focus on sustainability, as evidenced in part by the launch of the [Principles for Responsible Banking](#) in September 2019. The principles are designed to foster responsible banking practices and to formally implement sustainability impact analysis, target-setting and accountability among signatories (see Exhibit 15). They also aim to align banks' business practices with the UN's SDGs and the Paris Climate Agreement. The scale of the principles' ambition, their sponsorship by the UN and the wide degree of industry support – they attracted 130 banks at launch with a combined \$47 trillion in assets, representing a third of the global banking sector – indicate the potential scale of their impact on the banking sector.

Exhibit 15
Principles for Responsible Banking

 <p>PRINCIPLE 1: ALIGNMENT</p> <p>We will align our business strategy to be consistent with and contribute to individuals' needs and society's goals, as expressed in the Sustainable Development Goals, the Paris Climate Agreement and relevant national and regional frameworks.</p>	 <p>PRINCIPLE 2: IMPACT & TARGET SETTING</p> <p>We will continuously increase our positive impacts while reducing the negative impacts on, and managing the risks to, people and environment resulting from our activities, products and services. To this end, we will set and publish targets where we can have the most significant impacts.</p>	 <p>PRINCIPLE 3: CLIENTS & CUSTOMERS</p> <p>We will work responsibly with our clients and our customers to encourage sustainable practices and enable economic activities that create shared prosperity for current and future generations.</p>
 <p>PRINCIPLE 4: STAKEHOLDERS</p> <p>We will proactively and responsibly consult, engage and partner with relevant stakeholders to achieve society's goals.</p>	 <p>PRINCIPLE 5: GOVERNANCE & CULTURE</p> <p>We will implement our commitment to these Principles through effective governance and a culture of responsible banking.</p>	 <p>PRINCIPLE 6: TRANSPARENCY & ACCOUNTABILITY</p> <p>We will periodically review our individual and collective implementation of these Principles and be transparent about and accountable for our positive and negative impacts and our contribution to society's goals.</p>

Source: UNEP-FI

An evolving regulatory landscape is also heightening banks' focus on sustainable finance. In December 2019, for example, the [European Banking Authority \(EBA\) published its Action Plan on Sustainable Finance](#), outlining its approach on deliverables and activities related to ESG factors and risks. The EBA plan responds to the request from the European Commission to provide support for the implementation of its [sustainable finance agenda](#), mostly reflected in a number of mandates included in the [last banking legislation package](#) approved in May 2019. Within the broad ESG landscape, the initial focus of the EBA will be on climate risks.

Banks will increasingly be subject to climate stress tests, with [regulators in France](#) and Denmark³⁴ both expected to assess the risks posed to banks by climate change beginning in 2020. And in December 2019, the [Bank of England \(BOE\) opened a consultation](#) on a planned testing exercise designed to assess the long-term resilience of UK banks and insurers to the financial risks posed by climate change.

Governmental focus on climate change and sustainability will rise

Governments and regulators around the world are increasingly focused on providing greater structure and clarity to the sustainable finance market as their focus on climate change and sustainability grows. We expect continued proliferation of standards and taxonomies over the near term, which will initially complicate the landscape. Over the long run, however, the likely convergence of standards and market best practices will bolster investor confidence and support the growth of sustainable finance.

Sustainable finance policy efforts to date have been most advanced in Europe, where policymakers have sought to define which economic activities are sustainable, enhance disclosure requirements around sustainable investments, and facilitate the achievement of continent's climate goals. In December 2019, the Council of the European Union and European Parliament reached a political agreement on the EU Sustainable Taxonomy Regulation, which introduces a classification system for environmentally sustainable economic activities.³⁵ The taxonomy includes definitions of three categories of eligible activities:

- » **Activities that in and of themselves contribute substantially to at least one of the six environmental objectives while not doing any "significant harm" to the others:** the six environmental objectives include climate change mitigation; climate change adaptation; sustainable use and protection of water and marine resources; transition to a circular economy; pollution prevention and control; and protection and restoration of biodiversity and ecosystems.
- » **Transition activities:** activities for which there are no technologically and economically feasible low-carbon alternatives but which support the transition to a climate-neutral economy in a manner consistent with a pathway to limit the temperature increase to 1.5 degrees Celsius above pre-industrial levels, for example by phasing out greenhouse gas emissions.
- » **Enabling activities:** activities that enable other activities to make a substantial contribution to one or more of the objectives, and where that activity does not lead to a lock-in in assets that undermines long-term environmental goals, considering the economic lifetime of those assets, and has a substantial positive environmental impact on the basis of lifecycle considerations.

The Regulation, which will be effective from December 2021, will apply to all financial markets participants offering financial products. Thus it will not only cover labeled sustainable financial products, but it will also stipulate mandatory disclaimers for funds that do not market themselves as such. It also includes additional reporting requirements for large companies that already disclose social and environmental data under the Nonfinancial Reporting Directive.

While there have been some market concerns about its useability, we expect the taxonomy will help build investor trust around financial products marketed as green or sustainable over time, which will ultimately be positive for market growth. The taxonomy will have a direct impact on the green bond market, as a proposed EU Green Bond Standard would define project eligibility via the definitions in the taxonomy.³⁶ In January 2020, the European Investment Bank issued a CAD500 million Climate Awareness Bond that it considers to be the first globally "in line with evolving EU sustainable finance legislation."³⁷

The taxonomy will also have an impact on the development of the already complex ESG reporting landscape, which includes local jurisdictional requirements, as well as voluntary standards promulgated by international standard-setting bodies such as those highlighted below.

The European Commission has also proposed a European Green Deal, with the aim of Europe being the first climate-neutral continent by 2050.³⁸ Policy areas highlighted under the European Green Deal include: clean energy; sustainable industry; building and renovating; sustainable mobility; biodiversity; sustainable agriculture; and reducing greenhouse gas emissions.

Similar initiatives are underway globally to more clearly define sustainability and encourage market growth. In 2019, for example, five Chinese ministries jointly published the Green Industry Guidance Catalogue, which defines green industries in China.³⁹ In Canada, meanwhile, the Canadian Expert Panel on Sustainable Finance published its final report in June 2019, with recommendations including the development of Canadian green and transition-oriented fixed-income taxonomies, and the definition of a Canadian approach to implementing TCFD recommendations.⁴⁰ In Australia, the Australian Sustainable Finance Initiative was established in March 2019 to develop a roadmap for realigning the finance sector with ESG targets.⁴¹ And in November 2019, the Malaysian Securities Commission launched the Sustainable and Responsible Investment Roadmap for the Malaysian Capital Market.⁴²

Some early-stage initiatives are also under way in the US. Late in 2019, for example, the Securities and Exchange Commission sent examination letters to firms marketing their funds as ESG-focused, inquiring about their methodology for determining an investment to be socially responsible.⁴³ In addition, a bill proposed in 2019 would mandate ESG disclosure for companies and create a permanent sustainable finance committee to advise the SEC.⁴⁴

Sustainability disclosure landscape will evolve as market and regulatory forces progress

Companies currently disclose much of their sustainability data outside mainstream financial filings, such as in corporate social responsibility reports or on dedicated web pages. This information is generally not subject to the same rigor and scrutiny as their financial filings. As the regulatory landscape continues to develop, we expect this information will increasingly find its way into companies' annual financial filings, and grow more robust and consistent across jurisdictions. The following are some of the key standard setters providing guidelines most commonly utilized for sustainability reporting:

- » The [Sustainability Accounting Standards Board \(SASB\)](#) has developed a set of industry-specific sustainability metrics to enable companies to communicate with investors about the subset of sustainability information that is financially material to the business.
- » The [FSB Task Force on Climate-related Financial Disclosures \(TCFD\)](#) has developed voluntary climate-related financial risk disclosures for use by companies in providing information about physical, liability and transition risks associated with climate change.
- » The [Global Reporting Initiative \(GRI\)](#) offers a sustainability reporting framework commonly used in CSR and sustainability reports geared to a broad base of stakeholders.
- » The [Climate Disclosure Project \(CDP\)](#) focuses almost exclusively on climate reporting and assists with disclosure of the environmental impact of companies' business processes.
- » The [United Nations Global Compact \(UNGC\)](#) asks companies to publicly integrate policies covering human rights, labor standards, environmental actions and anti-corruption.

Moody's related publications

Compilation:

- » [ESG Focus: January 2020](#), January 15, 2020

Sector In-Depth:

- » [ESG – Global: Heard from the market: ESG relevance in global credit markets is accelerating](#), November 19, 2019
- » [Green Bonds – Global: Strong third-quarter issuance propels market toward \\$250 billion for 2019](#), November 7, 2019
- » [ESG – Europe and US: Companies' climate-related disclosures seldom reveal potential financial impact](#), October 21, 2019
- » [Green Bonds – Global: Annual issuance to surpass \\$200 billion in 2019 after record second quarter](#), August 8, 2019
- » [Cross-Sector – Green Bonds: Corporate issuers drive strong global green bond volume in Q1 2019](#), May 9, 2019
- » [Covered bonds – Europe: EU energy efficiency agenda increases credit risks for noncompliant covered bond collateral](#), April 17, 2019
- » [Green Bonds – Global: Global green bond issuance to hit \\$200 billion in 2019](#), January 31, 2019
- » [Green Bonds – Global: Environmental impact and reporting vary by jurisdiction and asset class](#), December 4, 2018
- » [Structured finance – Global: Green finance sprouts across structured finance sectors](#), November 13, 2018
- » [Green bonds – Global: Repeat issuers drive volume as green bond market matures](#), November 12, 2018
- » [Green Bonds – Global: Adoption of UN Sustainable Development Goals to drive demand](#), November 12, 2018
- » [Green Bonds – Sovereign: Sovereign green bond market on course for critical mass, but challenges remain](#), July 9, 2018
- » [Green Bonds – Global: Global municipal green bond issuance will continue to rise](#), March 19, 2018

Sector Comment:

- » [Banks – United Arab Emirates: United Arab Emirates' guiding principles on sustainable finance are credit positive for banks](#), January 23, 2020
- » [Financial Institutions – Europe: BoE climate change stress tests will reinforce risk management for banks and insurers](#), December 23, 2019
- » [Banking – Europe: EBA calls on banks for early action in sustainable finance amid long-term regulatory plan rollout](#), December 17, 2019
- » [Financial Institutions – France: France's financial regulator will stress test banks and insurers' exposures to climate change](#), December 4, 2019
- » [Sustainable Bonds – Global: Enel's sustainability-linked offerings reflect evolving market landscape](#), October 15, 2019
- » [Banking – Global: UN's Principles for Responsible Banking to embed sustainability in banking sector](#), September 27, 2019
- » [Sovereigns – Asia Pacific: Sustainable bond sales highlight intensified focus on addressing climate goals](#), June 19, 2019
- » [Non-financial companies – Russia: Interest rate subsidies will spur domestic green bond issuance, but risks remain](#), May 14, 2019
- » [Cross-Sector – Kenya: Kenyan green bond guidelines pave way for increased green financing, a credit positive for banks](#), February 25, 2019

Outlook:

- » [Covered Bonds – Global: 2020 Outlook – Credit quality will remain strong despite slowing economic growth](#), December 12, 2019
- » [Credit Conditions – Global: 2020 Outlook – Risks to credit conditions rise as the global slowdown takes hold](#), November 19, 2019

Issuer Comment:

- » [BlackRock, Inc.: BlackRock's ESG announcements signal its leadership in sustainable investments](#), January 17, 2020
- » [SFIL: Issuance of first European green covered bond backed by public-sector assets is credit positive for CAFFIL and SFIL](#), November 12, 2019
- » [BlackRock ICS Euro Liquid Environmentally Aware Fund: BlackRock launches Europe's first environmentally aware money market fund, a credit positive](#), July 22, 2019
- » [Société Générale: Société Générale issues France's first positive impact covered bond, a credit positive](#), July 9, 2019
- » [Government of Chile: Inaugural sovereign green bond sets strong precedent for future issuances](#), June 21, 2019
- » [Banks – Canada: Sustainable finance panel recommendations will focus Canadian banks' ESG approach](#), June 21, 2019
- » [Sovereigns – Global: Multilateral development banks' climate finance growth promotes resiliency in climate-vulnerable sovereigns](#), June 19, 2019
- » [Government of the Netherlands: Inaugural sovereign green bond issuance supports Dutch climate goals and resilience to rising sea levels](#), May 23, 2019

Credit Opinion:

- » [NORD/LB Luxembourg S.A. CBB – Renewable Energy Covered Bonds: New Issue Report – Luxembourgish covered bonds](#), January 28, 2020

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Endnotes

- 1 Labeled green bonds, social bonds and sustainability bonds are typically issued in accordance with the best practices published by the International Capital Market Association: the [Green Bond Principles](#), [Social Bonds Principles](#) and [Sustainability Bonds Guidelines](#), respectively.
- 2 Global Capital, "[NordLB's renewable debut draws demand](#)," January 20, 2020.
- 3 Climate Bonds Initiative, "[Climate Bonds releases new Climate Resilience Principles Framework for accelerating climate resilient investments in green bond market](#)," September 17, 2019.
- 4 The IEA's Sustainable Development Scenario sets out a view of how the global energy sector can evolve in order to achieve the energy-related UN SDGs, given that based on existing and announced policies – as described in the IEA Stated Policies Scenario (STEPS) – the world is not on course to achieve the outcomes of the UN SDGs most closely related to energy: to achieve universal access to energy (SDG 7), to reduce the severe health impacts of air pollution (part of SDG 3) and to tackle climate change (SDG 13).
- 5 Climate Bonds Initiative, "[An oil & gas bond we knew would come eventually: Repsol: Good on GBPs, not so sure on green credentials](#)," May 23, 2017.
- 6 Castle Peak Power, "[Issue of US\\$500,000,000 3.25% Notes due 2027 by Castle Peak Power Finance Company Limited](#)," July 19, 2017.
- 7 SNAM, "[SNAM: Successfully Launched the First Climate Action Bond in Europe](#)," February 21, 2019.
- 8 AXA Investment Managers, "[Financing brown to green: Guidelines for Transition Bonds](#)," June 10, 2019.
- 9 European Commission, "[Questions and Answers: political agreement on an EU-wide classification system for sustainable investments \(Taxonomy\)](#)," December 18, 2019.
- 10 ICMA, "[2019/2020 Working Group on Climate Transition Finance](#)."
- 11 Marfrig Global Foods, "[Marfrig issues sustainability bonds](#)," July 30, 2019.
- 12 United Nations, "[United Nations Secretary-General's Roadmap for Financing the 2030 Agenda for Sustainable Development: 2019-2021](#)."
- 13 World Bank, "[Seychelles launches World's First Sovereign Blue Bond](#)," October 29, 2018.
- 14 European Commission, "[Sustainable Blue Economy Finance Principles](#)."
- 15 IDB Invest, "[IDB Invest and Banistmo, a subsidiary of the Bancolombia Group, announce first gender bond in Latin America](#)," August 2, 2019.
- 16 United Nations Climate Change, "[HSBC Launches USD 1 Billion Bond in Support of UN's Global Goals](#)," December 1, 2017.
- 17 For more information about the UN Sustainable Development goals, see: United Nations, "[About the Sustainable Development Goals](#)."
- 18 Reuters, "[Enel ditches green bonds for controversial new format](#)," October 4, 2019.
- 19 Loan Market Association, "[Sustainability-Linked Loan Principles](#)."
- 20 International Capital Market Association, "[2020 Working Group on Sustainability/KPI-linked bonds](#)."
- 21 LSTA, "[Green Loan Principles](#)."
- 22 Bloomberg, "[Green Bonds Without the Bonds](#)," December 6, 2019.
- 23 Financial Times Alphaville, "[Germany's very generous green bond](#)," September 18, 2019.
- 24 HSBC, "[Blockchain: Gateway for sustainability linked bonds](#)," September 24, 2019.
- 25 BBVA, "[BBVA issues the first blockchain-supported structured green bond for MAPFRE](#)," February 19, 2019.
- 26 Business Roundtable, "[Statement on the Purpose of a Corporation](#)," August 2019.
- 27 Wall Street Journal, "[The Tricky Role of the CEO in a New Era of Social Responsibility](#)," December 12, 2019.
- 28 Governance & Accountability Institute, "[FLASH REPORT: 86% of S&P 500 Index® Companies Publish Sustainability / Responsibility Reports in 2018](#)," May 16, 2019.
- 29 Deloitte, "[Business confidence soars: Deloitte CFO Survey: 2019 Q4](#)," January 2020.
- 30 UN Principles for Responsible Investment, "[PRI Update: Q4 2019](#)."
- 31 Global Sustainable Investment Alliance, "[2018 Global Sustainable Investment Review](#)."
- 32 Sustainable Research and Analysis LLC, "[A Decade of Sustainable Funds Investing: 10 Years/10 Charts](#)," January 2020.
- 33 Climate Action 100+ [website](#).
- 34 Environmental Finance, "[Denmark's central bank to conduct climate stress test in 2020](#)," December 4, 2019.
- 35 European Commission, "[Questions and Answers: political agreement on an EU-wide classification system for sustainable investments \(Taxonomy\)](#)," December 18, 2019.
- 36 European Commission, "[EU Green Bond Standard](#)," June 18, 2019.
- 37 European Investment Bank, "[EIB's first CAB in 2020 inaugurates new documentation in CAD-market](#)," January 10, 2020.
- 38 European Commission, "[A European Green Deal](#)."
- 39 Paulson Institute, "[China Releases Green Industry Guidance Catalogue: Opportunities for US Business?](#)" April 4, 2019.

⁴⁰Government of Canada Expert panel on sustainable finance, "[Final Report of the Expert Panel on Sustainable Finance - Mobilizing Finance for Sustainable Growth](#)," June 2019.

⁴¹Australian Sustainable Finance Initiative [website](#).

⁴²Securities Commission Malaysia, "[Sustainable and Responsible Investment Roadmap for the Malaysian Capital Market \(SRI Roadmap\)](#)."

⁴³Wall Street Journal, "[ESG Funds Draw SEC Scrutiny](#)," December 16, 2019.

⁴⁴Responsible Investor, "[US: ESG disclosure bill inches through Congress but faces Senate hurdle](#)," January 16, 2020.

© 2020 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. AND/OR ITS CREDIT RATINGS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED BY MOODY'S (COLLECTIVELY, "PUBLICATIONS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S INVESTORS SERVICE DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S INVESTORS SERVICE CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES ITS PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER. ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process or in preparing its Publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it fees ranging from \$1,000 to approximately \$2,700,000. MCO and Moody's investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any credit rating, agreed to pay to MJKK or MSFJ (as applicable) for credit ratings opinions and services rendered by it fees ranging from JPY125,000 to approximately JPY250,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.