Environmental Finance

Sustainable Bonds Insight 2023

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Introduction

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There is little doubt that 2022 was a bruising year for the entire fixed income market, including sustainable bonds.

According to figures from *Environmental Finance Data*, green, social, sustainability, and sustainability-linked (GSSS) bond issuance in 2022 shrank 15% to $899 billion from the record $1.05 trillion set in 2021.

After jumping to become a trillion-dollar market in 2021, therefore, challenges wrought by geopolitical conflict and inflation brought the more than a decade long growth of sustainable bond issuance to an abrupt end.

But it was also a year which revealed just how far the market has come to date – and how much further it still needs to go.

Green bonds, for example, demonstrated the enduring appeal of the oldest sustainable bond label. Whereas its younger labels all reported issuance declines in excess of 20%, the 15-year-old green bond label managed to contain issuance shrinkage to just 10% – considerably outperforming the 26% decline in total fixed income markets.

What is more, despite the turmoil of 2022, the sustainable bond market was able to bolster its share of global bond markets to more than 13.5% – including more than a 15% share in the last six months of the year. This is a striking improvement on the 12% share reported in 2021, and less than 7% share in 2020.

This is a remarkable achievement, and a fine indicator of how the sustainable bond market has come of age. A rocky 2022 has revealed the strong foundations on which the striking growth of sustainable bonds has been built in recent years. It is little wonder, therefore, that market experts forecast that 2023 will see a rebound in sustainable bond issuance – even if expectation of a fresh record being set is tempered by the tough macroeconomic backdrop.

In contrast, sustainability-linked bonds (SLBs) were perhaps the biggest disappointment for 2022. In 2021, the market surged to nearly $100 billion in issuance in 2021 – the first full year following publication of the Sustainability Linked Bond Principles in 2020. Despite reaching key milestones in 2022 – such as attracting Chile and Uruguay as debut sovereign SLB issuers – the market shrank nearly a quarter to $74 billion in 2022, however.

The reasons for this sharp reversal are complex, but it was clear that rising scrutiny of the ambition and materiality of the targets associated with these potentially transformative transition-focused instruments played a significant role in weighing down issuance.

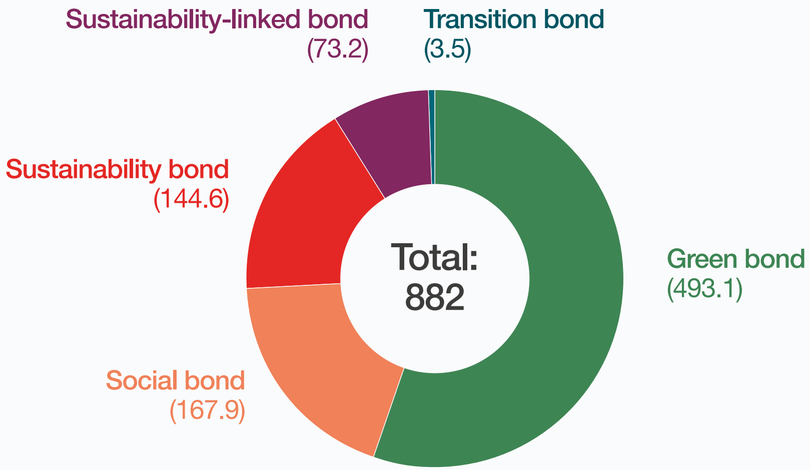
Yet, as we will see from contributions to this report, intensifying scrutiny of how to ensure the credibility of all sustainable bond labels has also come to the fore in 2022 – and the market is responding. Despite hand-wringing around 'greenwashing' risks, that is an exciting rather than endangering prospect for the sustainable bond market in 2023 and beyond.

Indeed, perhaps the most exciting dimension of this is that 2023 is likely to see a diverse set of market participants really shine the spotlight on the importance that the necessary if nebulous 'transition' theme is set to play in sustainable bond markets. Again, contributions to this report reveal just how pervasive and powerful this theme is to many issuers, underwriters, investors and service providers.

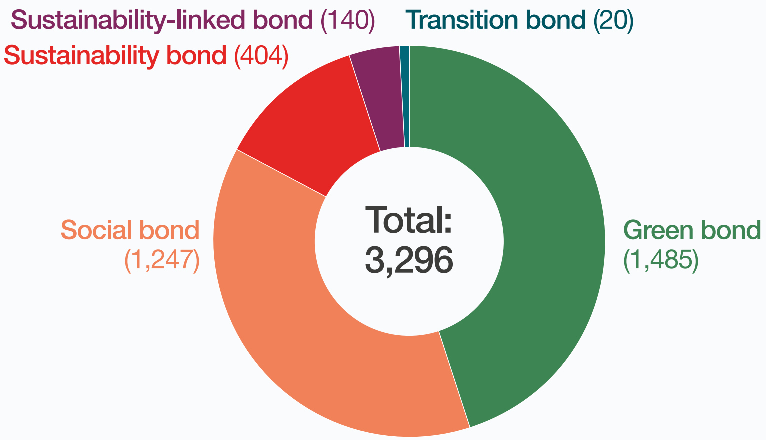
Put simply, greater focus on defining what is and is not a credible and comprehensive transition plan will not only help provide the market develop confidence in how to structure transition instruments like SLBs better – with a commensurate boost on issuance, we hope – but also better judge all bond issuers on whether their actions are part of the solution rather than the problem.

Once again, the scale and sophistication of the fixed income markets can and should play a powerful catalytic role in driving the overall 'greening' of the economy. It is a role it has played so well to date, but 2023 needs us all to step up for the next phase of the process – making 'better' finance, even better still. ■

2022 Sustainable bond issuance value breakdown ($Bn)



2022 Sustainable bond issuance volume breakdown



Top 10 biggest issues of 2022 by USD*

Issuer	Value (Bn)	Currency	Value in USD ($Bn)
European Union	6.5	EUR	6.9
Cades	6	EUR	6.6
European Union	6	EUR	6.6
European Union	6	EUR	6.2
Republic of Italy	6	EUR	5.9
Cades	5	EUR	5.4
European Union	5	EUR	5.3
Dutch State Treasury Agency	5	EUR	5.2
State of the Netherlands	4.9	EUR	5.2
United Kingdom	4.5	GBP	5.2

*Currency conversion taken at pricing date of the bond

Largest in 2022

The largest deal and issuers of the year in the green bond market

Largest Single Green Bond

European Union
Value: €6 Bn
($6.6 Bn)

Largest Supranational

European Union
Value: $25.2 Bn

Largest Issuer

European Union
Value: $25.2 Bn

Largest Corporate

TenneT
Value: $7 Bn

Largest Agency

KfW
Value: $11.1 Bn

Largest Financial Institution

Bank of China
Value: $7.7 Bn

Largest Sovereign

Republic of France
Value: $10.8 Bn

Largest Municipal

Housing and Development Board
Value: $2.4 Bn

The largest deal and issuers of the year in the social bond market

Largest Single Social Bond

Cades
Value: €6 Bn
($6.6 Bn)

Largest Supranational

European Union
Value: $9.3 Bn

Largest Issuer

Cades
Value: $39.6 Bn

Largest Corporate

West Nippon Expressway
Value: $4 Bn

Largest Agency

Cades
Value: $39.6 Bn

Largest Financial Institution

Industrial Bank of Korea
Value: $3.7 Bn

Largest Sovereign

N/A

Largest Municipal

Commonwealth of Massachusetts
Value $2.7 Bn

Largest in 2022

The largest deal and issuers of the year in the sustainability bond market

Largest Single Sustainability Bond

THE WORLD BANK IBRD • IDA | WORLD BANK GROUP

IBRD
Value:
$4.5 Bn

Largest Issuer

THE WORLD BANK IBRD • IDA | WORLD BANK GROUP

IBRD
Value:
$20.2 Bn

Largest Agency

AFD AGENCE FRANÇAISE DE DÉVELOPPEMENT

Agence Francaise de Developpement
Value: $4.2 Bn

Largest Sovereign

Republic of Chile
Value: $7.1 Bn

Largest Supranational

THE WORLD BANK IBRD • IDA | WORLD BANK GROUP

IBRD
Value:
$20.2 Bn

Largest Corporate

CFE Comisión Federal de Electricidad

Comisión Federal de Electricidad
Value: $2.3 Bn

Largest Financial Institution

BNG BANK

BNG Bank
Value: $4.7 Bn

Largest Municipal

The Federal State of North Rhine Westphalia
Value: $3.7 Bn

The largest deals of the year in the sustainability-linked bond market

Largest Single Sustainability-linked Bonds

enel

Enel
Value: $12.5 Bn

Carrefour

Carrefour
Value: $2.5 Bn

vodafone Ziggo

VodafoneZiggo
Value: $2.4 Bn

Republic of Chile
Value: $2 Bn

Pernod Ricard

Pernod Ricard
Value: $1.9 Bn

Top 5 largest issuing countries in 2022 in the green bond market

USA $61.1 Bn

Largest deals

General Motors	$2.25 Bn
Ford	$1.75 Bn
PepsiCo	$1.25 Bn

Largest issuers

Fannie Mae	$10.5 Bn
Prologis	$3.4 Bn
General Motors	$2.25 Bn

France $33 Bn

Largest deals

RTE	€850 M ($960 M)
BPCE	€750 M ($851 M)
Icade	€500 M ($571 M)

Largest issuers

Republic of France	$10.8 Bn
Suez	$4.4 Bn
BPCE	$2 Bn

Netherlands $32.1 Bn

Largest deals

Green Storm	£500 M ($539 M)
De Volksbank	£500 M ($527 M)
TenneT	£750 M ($788 M)

Largest issuers

TenneT	$7 Bn
Dutch State Treasury Agency	$5.2 Bn
State of the Netherlands	$5.2 Bn

Germany $61.1 Bn

Largest deals

Federal Republic of Germany	€5 Bn ($5 Bn)
Federal Republic of Germany	€4 Bn ($4.3 Bn)
KfW	€4 Bn ($4.2 Bn)

Largest issuers

KfW	$11.1 Bn
Federal Republic of Germany	$9.3 Bn
Deutsche Bank	$4.1 Bn

China $59.1 Bn

Largest deals

Bank of China	CNY30 Bn ($4.3 Bn)
Bank of Communications	CNY20 Bn ($3 Bn)
Agricultural Bank of China	CNY20 Bn ($2.8 Bn)

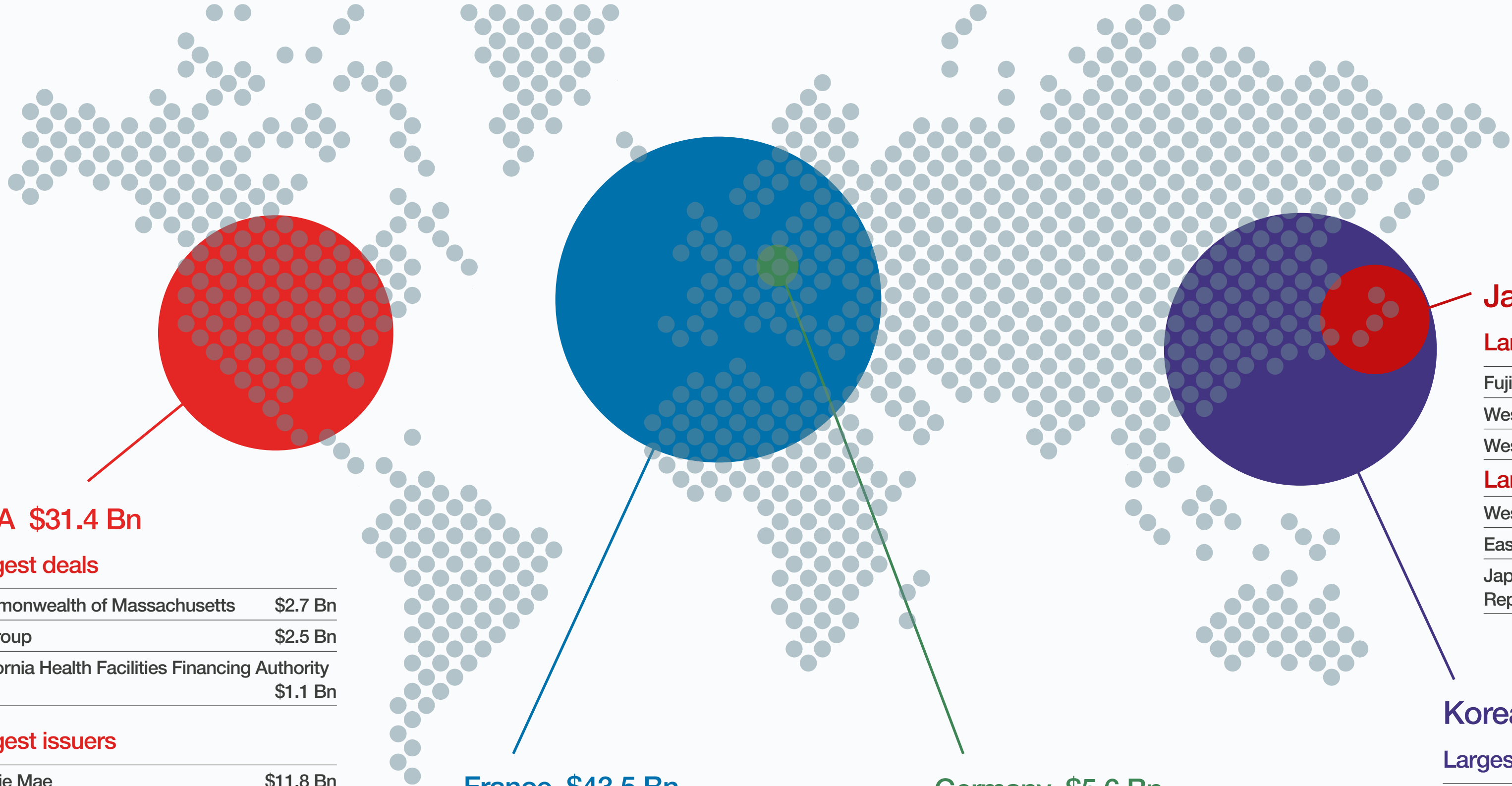
Largest issuers

Bank of China	$7.7 Bn
Bank of Communications	$4.4 Bn
ICBC	$4.2 Bn

USD conversion taken from pricing date resulting in variation in USD value

Methodology: Deals from supranational entities have not been included in individual countries.

Top 5 largest issuing countries in 2022 in the social bond market



Japan: $14.6 Bn

Largest deals

Fujifilm	JPY120 Bn ($954 M)
West Nippon Expressway	JPY120 Bn ($932 M)
West Nippon Expressway	JPY120 Bn ($829 M)

Largest issuers

West Nippon Expressway	$4 Bn
East Nippon Expressway	$2.9 Bn
Japan Expressway Holding and Debt Repayment Agency	$2.4 Bn

USA $31.4 Bn

Largest deals

Commonwealth of Massachusetts	$2.7 Bn
Citigroup	$2.5 Bn
California Health Facilities Financing Authority	$1.1 Bn

Largest issuers

Fannie Mae	$11.8 Bn
Citigroup	$2.9 Bn
Commonwealth of Massachusetts	$2.7 Bn

France $43.5 Bn

Largest deals

Cades	€6 Bn ($6.6 Bn)
Cades	€5 Bn ($5.4 Bn)
Cades	€5 Bn ($5 Bn)

Largest issuers

Cades	$39.6 Bn
Unédic	$1 Bn
Credit Agricole CIB	$993 M

Germany $5.6 Bn

Largest deals

NRW.BANK	€1 Bn ($999 M)
Vonovia	€850 M ($939 M)
Vonovia	€800 M ($884 M)

Largest issuers

Vonovia	$1.9 Bn
NRW.BANK	$999 M
Berlin Hyp	$789 M

Korea: $36.4 Bn

Largest deals

Korea Housing Finance Corporation	KRW1,566 Bn ($1.3 Bn)
Korea Housing Finance Corporation	KRW1,546 Bn ($1.3 Bn)
Korea Housing Finance Corporation	KRW1,291 Bn ($1.1 Bn)

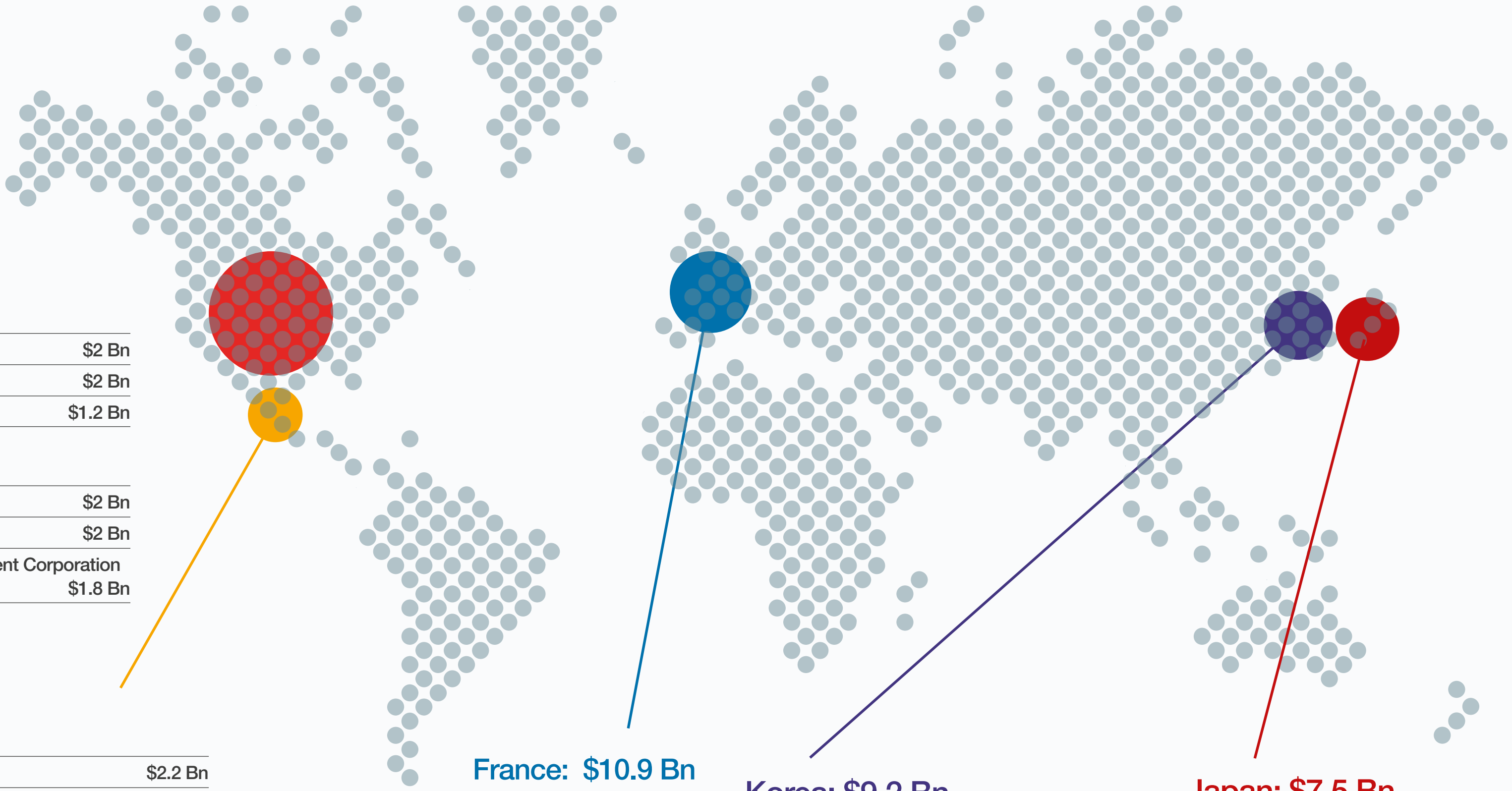
Largest issuers

Korea Housing Finance Corporation	$17.3 Bn
KOSME	$4 Bn
Industrial Bank of Korea (IBK)	$3.7 Bn

USD conversion taken from pricing date resulting in variation in USD value

Methodology: Deals from supranational entities have not been included in individual countries.

Top 5 largest issuing countries in 2022 in the sustainability bond market



USA: $16.6 Bn

Largest deals

Wells Fargo	$2 Bn
Bank of America	$2 Bn
Duke Energy	$1.2 Bn

Largest issuers

Wells Fargo	$2 Bn
Bank of America	$2 Bn
New York City Housing Development Corporation	$1.8 Bn

Mexico: $7.3 Bn

Largest deals

United Mexican States	$2.2 Bn
Comisión Federal de Electricidad	$1.8 Bn
America Movil	MXN24 Bn ($1.2 Bn)

Largest issuers

United Mexican States	$2.8 Bn
Comisión Federal de Electricidad	$2.3 Bn
America Movil	$1.2 Bn

USD conversion taken from pricing date resulting in variation in USD value

Methodology: Deals from supranational entities have not been included in individual countries.

France: $10.9 Bn

Largest deals

Agence Francaise de Developpement	€1.5 Bn ($1.6 Bn)
Action Logement Services	€1.25 Bn ($1.4 Bn)
Action Logement Services	€1.25 Bn ($1.4 Bn)

Largest issuers

Agence Francaise de Developpement	$4.2 Bn
Action Logement Services	$2.1 Bn
La Poste	$1.2 Bn

Korea: $9.2 Bn

Largest deals

Hanwha Energy	$750 M
Kookmin Bank	$700 M
KEB Hana Bank	$600 M

Largest issuers

Kookmin Bank	$1.2 Bn
Woori Bank	$844 M
KEB Hana Bank	$829 M

Japan: $7.5 Bn

Largest deals

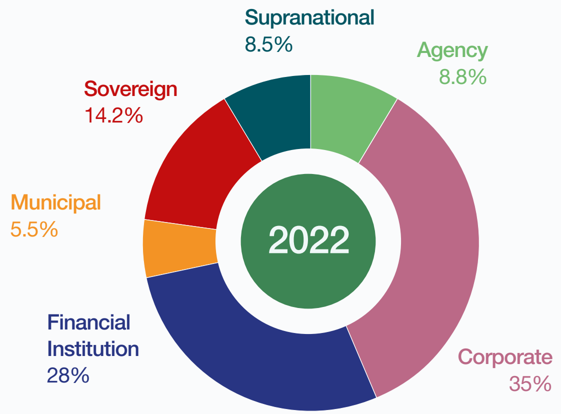
Japan International Cooperation Agency	$900 M
Development Bank of Japan	$700 M
KDDI	JPY100 Bn ($667 M)

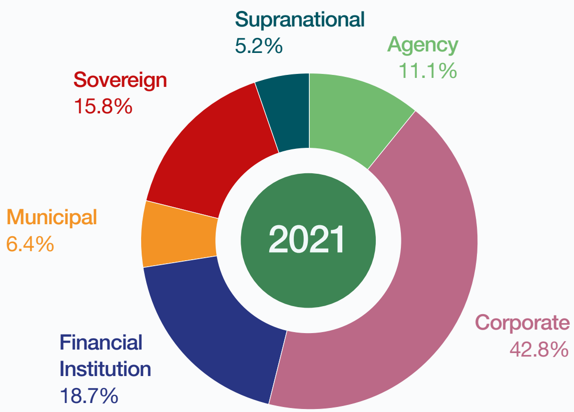
Largest issuers

Japan International Cooperation Agency	$2 Bn
Development Bank of Japan	$900 M
KDDI	$667 M

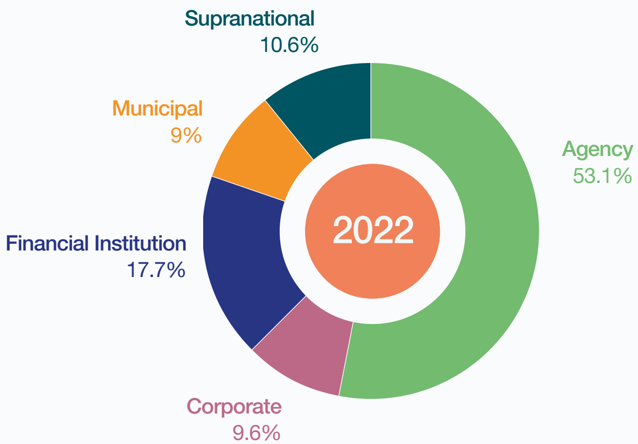
Issuer type

Green bonds

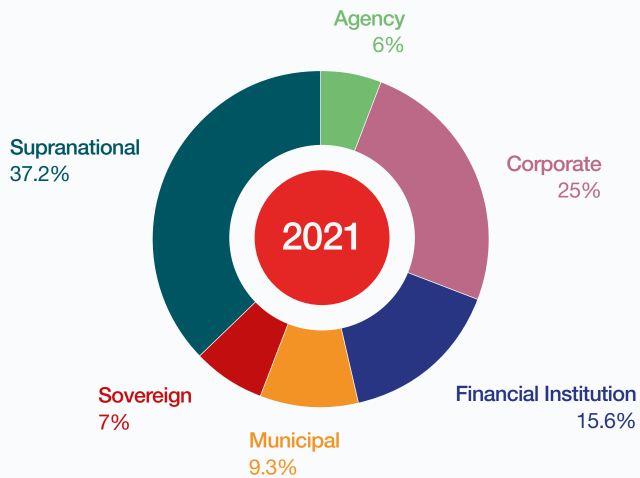




Social bonds



Sustainability bonds



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Back on an upward trajectory

As the sustainable bond market returns to growth, issuers and investors face greenwashing concerns, new regulatory developments – and the prospect of massive issuance as the net-zero transition accelerates. BNP Paribas' sustainable finance specialists review the landscape

Environmental Finance: **The green bond market is widely tipped for a return to growth in 2023, but greenwashing concerns are casting a cloud. How big a threat do greenwashing and reputational risk pose to issuance?**

Constance Chalchat: We are seeing diverging trends. The first is a certain normalisation of markets after the challenging market conditions we saw last year. January has been stronger in terms of green and sustainable bond issuance, as issuers who held off last year have returned to the market to fund their continuing efforts to transition as part of their net-zero trajectories. In the green bond segment, for instance, we are forecasting volumes of at least $600 billion, up from $524 billion last year – and the risk to that forecast is to the upside.

However, this growth is being mitigated by the second trend, which is scrutiny around greenwashing. I'm expecting issuers who could be challenged as to whether their financing could be described as sustainable, or whose framework is not very robust, to favour conventional issuance rather than turning to the ESG bond market.

EF: Are these concerns around greenwashing justified?

CC: The way we see it, criticisms can come either from a transaction from a sector that is far from green, or from an issuer which is not very sustainable, or from the transaction itself which doesn't meet the International Capital Markets Association (ICMA) or Loan Market Association (LMA) principles.

To address each of these in turn. Take a sector that is fossil-fuel heavy. If an energy company is switching to low-carbon, it's entirely legitimate for this company to do a green issuance to invest in renewables, for instance, provided it is transparent about the use of proceeds.

Constance Chalchat, head of CIB company engagement and CSO global markets

The second type of situation is where the company itself has faced controversies. Then it is necessary for this company to evidence that it has put in place solid remediation plans and has a robust approach with material targets in a sustainability-linked bond (SLB) that address real sustainability ambitions. I've seen some transactions arranged in the market where companies are setting objectives that have already been achieved, or which are not material. We need to see public scrutiny of these deals, scrutiny from the press and, indeed, we need to see these companies' banks and advisors saying they need to respect market-established principles.

EF: To what extent do we need to see greater standardisation in the sustainable bond market? Does that provide the answer to greenwashing concerns?

Frederic Zorzi: When you speak to investors, everyone has their own methodologies. That can be a positive: after all, when you look at the 2008 crisis, you can argue that a common approach by rating agencies didn't prevent a credit collapse of one part of the market. So, having people looking at ESG from different angles is no bad thing; it can challenge issuers. But, to evolve, the market will at some stage need the equivalent of the International Financial Reporting Standards (IFRS) for accounting, and the work of the International Sustainability Standards Board (ISSB) is a very good development from that perspective. That will allow investors to compare apples with apples, so to speak.

There is enormous work underway to address this challenge – and, as a bank, we are closely involved in the development of regulations and standards. Whether ICMA, the LMA, the EU Platform for Sustainable Finance, the Hong Kong Green Finance Association, there are a lot of very serious market bodies working with investors to set up these standards. There is real willingness among market participants – issuers, banks,

Frederic Zorzi, global head of primary markets

Trevor Allen, Markets 360 head of sustainability research

Agnes Gourc, head of sustainable capital markets

investors – to see strong standards agreed.

CC: We pushed hard for standardisation of key performance indicators (KPIs), both at ICMA with sustainability-linked bonds as well as through the LMA for KPIs on the loan side. The ICMA KPI registry is a great resource. Having standard KPIs both helps ensure materiality and allows investors to compare companies in terms of their ambition. It's an important part of the answer to greenwashing.

EF: What about the market's medium-term prospects. How do you see patterns of issuance evolving?

Trevor Allen: The SLB market is difficult to forecast, as we've less than four years of data, and social and sustainability bonds tend to be issued in response to a particular event, so volumes tend to be a bit more volatile. But green bond issuance is about the CapEx needed for the low-carbon transition and understanding countries' policies to generate clean energy.

Fundamentally, green bond issuance is about the economic competitiveness of solar and wind energy, and about the extent of support for emerging clean energy technologies, like batteries, electric vehicles and the hydrogen economy. On the former, wind and solar were economically competitive with natural gas when it was cheap. On the latter, we are seeing subsidy programmes like the Inflation Reduction Act in the US, Europe's response and, in future, I expect to see similar initiatives in Asia as well. That is going to continue to push the green transition, and we are going to see substantial green issuance in response.

EF: Which instruments hold the best promise for financing the net-zero transition – SLBs or transition bonds?

Agnes Gourc: For those sectors or companies that have CapEx that are delivering significant decarbonisation projects, but which are not yet net zero, then transition bonds can be a very useful tool. And we've seen some quite significant initiatives last year, such as Japan's plans for transition bonds and work at the G20 and the OECD around transition finance. However, it's true to say that transition bonds, as a use-of-proceeds instrument, haven't been used massively yet. I think we'll see developments in 2023 in this particular part of the market, and not only from the Asia-Pacific region.

What we always tell issuers who are looking at ESG bonds is that there are different types of approaches, and the question to ask is, which one suits your company, and where are you in your evolution? There can be a tendency to look at precedents in the market, and almost do a 'copy-paste': that's often not the right approach.

EF: What about emerging technologies? What role can the sustainable bond market play here?

TA: Certainly, there is an urgent need for capital to finance energy storage – whether utility-scale batteries to shift the energy generated from intermittent renewables like solar to better fit the daily demand curve, or hydrogen to store energy over longer time periods. We will also need blended finance to help bring down the cost of the energy transition in emerging markets: it can be extremely powerful in helping to attract foreign direct investment into countries that are higher risk and providing it at interest rates that can make renewables lower cost than coal, for example.

There's also an urgent need to simply have a lot more of existing technologies. China produces 80% of the world's solar panels. For reasons of energy security, we will need to ensure that countries have the materials and technologies they will

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Franck Rizzoli, head of ESG financing advisory

need to meet their energy transition goals: that ranges from copper wire to power transformers to wind turbine blades to solar panels.

But I think the market will start looking beyond energy, at issues such as biodiversity. As an example, soil can act as a massive carbon sink, if it's well managed. That requires things like ensuring farmers have a more diverse group of crops, while providing them with the same level of remuneration. It's not necessarily about new technologies, but the green bond market could have a role in funding the systems we need to see to ensure that the planet's critical natural cycles stay in balance, meaning tackling mitigation, adaptation and biodiversity.

EF: How can disclosure initiatives underway in the market help accelerate sustainable bond issuance?
Franck Rizzoli: Let's take the EU's Sustainable Finance Disclosure Regulation (SFDR). It's important to understand its ramifications, particularly for investors. For any fund registered as Article 8 or 9, the regulation requires them to increase ESG disclosure. To do so, they need to get the data from somewhere – this is ultimately putting the burden of disclosure on issuers. Investors are therefore increasingly looking for instruments and issuers that can provide them with higher levels of transparent data and impact for them to comply with the regulation.

Many of the conversations we are having with investors are around how use-of-proceeds bonds can help them fulfil their obligations under SFDR. These bonds typically come with impact reports that can substantially support them in this regard. So we believe that 2023 will see a big re-focus on use-of-proceeds bonds – and, by issuing them, issuers will be able to potentially tap into additional demand from investors.

In turn, we think that greater disclosure will help support the credibility of the market. Well-structured sustainability-linked bonds, with ambitious targets and robust reporting, will provide measurable impact that investors can point to.

AG: It is also important to note that, while more disclosure is important, we need high quality disclosure on material topics. It's important here that we don't see a mushrooming of disclosure initiatives that end up completely confusing issuers and investors. The ISSB disclosure initiative is doing valuable work here, in bringing together important disclosure frameworks that are already in existence.

When they think about disclosure, issuers always need to ask themselves, why would investors or broader stakeholders need that information? Is it material? Is it relevant to our business?

We would also argue it is also true the other way round. Through working on sustainable bond issuances, we have helped many of our clients, including in emerging markets, further evolve their disclosure.

EF: What about other regulatory developments? Which should sustainable bond issuers and investors be watching most closely?
Jeanne Aing: Probably the most important is the European Green Bond Standard (EU GBS). This was due to be agreed last year, but it has been held up by ongoing negotiations between the European Commission, Parliament and Council. It would create a 'gold standard' in terms of disclosure and external reviewers who are registered and supervised – in this case, from the European Securities and Markets Authority – and alignment with the EU Taxonomy. The Parliament wants all assets financed by GBS-certified bonds to be aligned with the Taxonomy; member states are arguing for a 20% 'flexibility pocket'. We would support this, as there a risk that, without this flexibility, it would make it very difficult to issue EU GBS-certified bonds.


Jeanne Aing, head of CIB regulatory anticipation

Regarding the EU Taxonomy, we are also looking forward to the definition by the EU of other sustainable activities, covering the circular economy, pollution, water and biodiversity. The more activities that are defined, the better for the development of the green bond market. There are a lot of regulatory developments underway: we are seeing a lot of standards, taxonomies and disclosure requirements emerging around the world. Any regulations that help to bring greater clarity, transparency and comparability for investors will help to grow the market. ■

For more information about Sustainable Finance at BNP Paribas, see: https://cib.bnpparibas/low-carbon

Credibility is key for sustainability-linked transactions after bruising 2022

The initial excitement surrounding sustainability-linked transactions (SLTs) subsided towards the end of last year as questions were raised regarding possible shortcomings. Federico Pezzolato, Marie-Bénédicte Beaudoin and Salima Kettani discuss what the market can learn as these instruments evolve

***Environmental Finance*: What is the outlook and investor interest in SLTs?**

Federico Pezzolato: In the second half of 2022, SLTs received significant criticism regarding their robustness. We have also seen a major change in the type of issuers coming to the market. High-yield issuers have almost disappeared due to higher interest rates and financing costs. Because SLT structuring is more complicated than use-of-proceeds (UoP) structures, sub-investment grade companies issuing SLTs may have come to the market with relatively weak frameworks in 2021 and 2022. All those elements may have impacted the perceived quality and integrity of the market.

However, in the first weeks of 2023, we have seen a balanced mix of SLTs and UoP projects and we expect to see this trend continuing over the year, with issuers and investors adopting a more critical and careful approach on SLTs.

Marie-Bénédicte Beaudoin: In addition, criticisms around greenwashing have materialised in this space and it is clear there is a need for further guidance on how to structure those instruments. There have also been some questions around whether there is a "greenium" (green premium) with SLTs. There is not a clear consensus on that aspect.

One thing to watch will be whether there will be a backlog of sustainability-linked bonds (SLBs) that will unlock if market conditions improve over this year. We expect easing inflation and interest rates will result in high-yield issuers coming back into the market.

Another question is whether key performance indicators (KPIs) will be more diverse in 2023. Greenhouse gas emissions (GHGs) represented the vast majority of KPIs in 2022. Will there be a greater inclusion of topics such as biodiversity or social KPIs that are increasingly on the agenda of investors?

> "We have also seen a major change in the type of issuers coming to the market. High-yield issuers have almost disappeared due to higher interest rates and financing costs."
> Federico Pezzolato

EF: Could you expand on the challenges and criticisms that SLTs are experiencing?

MBB: One challenge is the materiality of KPIs and to what extent they are relevant and core to the business of the issuer. The second aspect is the ambitiousness of targets and how much they go beyond "business as usual." Another challenge relates to innovative KPIs and how to evaluate them when there are no existing benchmarks or past performance for comparison. In addition, we think that the financial characteristics of the SLTs and the impact the realisation of their targets will have on the financial structure of a business will be more scrutinised in the future.

Salima Kettani: Last year's market conditions were challenging. SLBs typically require tenors of five to 10 years. In higher-rate environments, issuers favour shorter maturities, and this consequently prevented some of them from coming to the SLB market last year.

FP: At the beginning, market players were inebriated by the flexibility offered by SLTs and the fact that there is no segregation of the proceeds. Issuers were very happy with this approach. But the instrument is proving to be much more complicated than it first appeared: There is an explicit need to have continuous maintenance of an SLT. While the KPIs are more or less stable, the level of ambition evolves over time. Reporting and transparency towards investors are therefore fundamental. We have been working with several issuers on updating targets. What they set two years ago is not necessarily seen as robust or ambitious enough in today's context.

> "It has become clear that SLTs are not for everyone, and it is not sufficient to simply identify a KPI and get an external validation"
> Marie-Bénédicte Beaudoin

Federico Pezzolato

Marie-Bénédicte Beaudoin

Salima Kettani

MBB: It has become clear that SLTs are not for everyone, and it is not sufficient to simply identify a KPI and get an external validation. It is important to have a robust strategy in place and to have the resources and solid action plan to deliver those results. This is especially important for issuers from high-yield or hard-to-abate sectors who need to establish the credibility of the issuance. Investors will be paying even more attention to the robustness, materiality and ambitiousness of the targets.

EF: Are the same challenges also present in the loan market?

SK: In the sustainability-linked loan (SLL) market, we have noticed little scrutiny around private transactions. The second party opinion (SPO) demand in this segment has recently increased, assuring that the KPIs remain relevant, and the Sustainability Performance Targets (SPTs) remain ambitious for the term of the SLL. In emerging markets, particularly the Middle East and Asia, we have witnessed a growth in SLL transactions and believe that this trend will continue in 2023. We continue to encourage issuers to get an external view on this type of transaction. Also, the reporting on SPTs post-issuance, particularly in the SLL market is not standardised, so it's likely to be decided on a loan-by-loan basis.

FP: We also see different reporting trends in private versus public markets. While private markets may lack transparency, there is usually an annual monitoring of the progress on the SPT trajectory. By contrast, we see irregular monitoring in the SPT trajectories adopted in public markets, despite more transparency overall in public instruments and tradeable securities. It will be interesting to see whether private and public markets can have a positive influence on each other over the course of the year.

When it comes to private markets, we try to share the experience we have gained in public markets. For instance, we have developed specific services for loans and in private transactions where the level of disclosure is usually lower. The importance for an external verification is fundamental and it's requested by lenders more and more.

EF: How can issuers better define materiality?

MBB: Using international, national, regional standards and internationally recognised benchmarks are useful. The chosen KPIs should be strictly linked to the issuer's activity and its strategy – impacting the company processes and delivering performance improvements in significant segments of the business, and also on the issuer's stakeholders. Also, the representativeness of the baseline year is important for the level of ambition of the SPT. Issuers should not choose a baseline in a year where there were exceptional events – such as a merger or divestment.

SK: The recent KPI registry by the International Capital Market Association (ICMA) has helped provide a palette of KPIs to guide each sector. There are over 300 KPIs – both core and secondary – to choose from. We notice that issuers and underwriters are already actively referencing it and we welcome this indication provided by ICMA, which will help a more ordered development of the market.

EF: Do you think there will be a widespread acceptance of the structure by both investors and issuers?

MBB: As we saw with the green bond market, we need to give SLTs time to establish themselves and go through this initial phase. They have only been around for three years. It's a learning curve and the market knows there is a need for more guidance. There seems to be appetite from investors, and we have seen a diversification in the type of SLT issuers, such as the first sovereign one in 2022. Maybe SLTs won't overtake UoPs in 2023, but there is potential for them to grow and keep on their current trajectory.

FP: In order to tackle the challenges in the SL market, we will probably see the different instruments grow together in public markets, combining the clarity of the UoP structure with the flexibility of the SLT. We are in a study phase in terms of what these targets have achieved. We need some defaults in the sense that we need to see what happens in terms of financial characteristics. Certainly, this will help the market to strengthen and to evolve.

SK: For issuers that miss their targets it will be interesting to see how it will impact their ESG profile and credit ratings.

EF: Given the challenges in the SLB market, could we see a resurgence of interest in the transition bond UoP structure?

FP: The UoP market is more mature, and investors are adept at scrutinising such products. The main challenge, which may turn into a positive advancement in the long term, sits with the proliferation of taxonomies and local standards that we have seen in the last 18 months. This is also a healthy complication because all these taxonomies, with all their different levels of analysis and detail, push issuers to analyse their portfolios more closely in order to identify eligible projects. This means that there is now a more robust assessment of the projects that can be effectively financed with the UoP structure. And it is easier to implement, relatively speaking.

The transition finance concept suffered at the beginning due to a lack of guidance and no precise definition of what transition is. We have seen various attempts but there is still much room for interpretation for both issuers and investors when it comes to the definition of UoP categories and impact. In hard-to-abate sectors, we have an incredible amount of assets and CapEx that could be financed with UoP transactions. The guidelines adopted in Japan and the attempt to define transition taxonomy in Canada are good examples of this and it will be interesting to observe how the debate evolves in 2023.

> "For issuers that miss their targets it will be interesting to see how it will impact their ESG profile and credit ratings"
> Salima Kettani

With the emergence of SLTs, it is possible that transition bonds will get a second chance. The market is now more expert in managing the complexities of SLTs and there is a growing awareness that we have to invest in the climate transition effectively.

EF: How has the role of an SPO provider evolved in the context of a more complex environment, both from regulatory and market sophistication perspectives?

FP: As an SPO provider, it remains to be seen how regulation will impact our activity and how it will shape markets. We welcome any indication from regulators that provides more clarity and reduces room for interpretation. Having a solid and science-based approach towards the analysis of the sustainability credentials of SLTs and different frameworks is fundamental.

We work as external reviewers but we are also sparring partners for our issuers. We have experience working with several different issuers and so we are well positioned to express an opinion as to how they can anticipate potential criticism towards their instruments. We challenge them and we try to push them to improve their approach. Ultimately, the decision is theirs, so we don't intervene in the construction of the frameworks, but we think it's fundamental to work with a valid and solid partner to have a robust SPO in place.

MBB: Some issuers have dropped KPIs or SPTs in the course of the SPO process. We do not hesitate to raise challenging questions (on materiality and ambition) in our reviews, because that helps shape the robustness of the issuers' frameworks and how they will be received by investors. It may take slightly longer but it is worth the time. ■

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To learn more about ISS Corporate Solutions' Sustainable Finance Solutions, contact: SPOsales@isscorporatesolutions.com

By way of background, ISS Corporate Solutions (ICS) works in collaboration with ISS ESG, the responsible investment arm of Institutional Shareholder Services, as the distributor of SPOs. While the SPOs are sold and distributed by ICS, the analytical work to prepare and issue SPOs is performed by ISS ESG.

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The sustainable bond market against the background of a new geopolitical reality

2022: The year in which everything turned out differently than expected. Marcus Pratsch looks at the dynamics shaping sustainable bonds

The sustainable bond market has become accustomed to setting spectacular record-breaking annual issuance totals in recent years. Nonetheless, even in that context, the eagerly anticipated $1 trillion milestone for green, social, sustainability and sustainability-linked (GSSS) bond issuance achieved in 2021 was a special one.

In recent years, the sustainable bond market has only gone in one direction. "Forward always, backward never", was the undisputed trend. Even at the height of the Covid-19 pandemic in 2020, in which social and sustainability bonds soared, the green bond segment, which had initially slumped in a tremendous way, fought its way back to new heights. Hence, at the beginning of the year, no one doubted that the success story of labelled bonds would continue in 2022.

However, in 2022, for the first time in more than a decade, the sustainable bond market saw a decline in new issuance volume by 23%, affecting every single segment. The new geopolitical reality led to tough fixed income market conditions which these labelled bonds have never faced before: rising energy and commodity prices, a global inflation surge and the end of a decade of ultra-low interest rates.

While the mature green bond segment proved relatively resilient with a decline of only around 13%, new issuance volumes of sustainability bonds (-21%), target-linked and transition bonds (-37%) and social bonds (-44%) were less immune to the rough market conditions. With a share of 60% of new issuance volume in the sustainable bond market, the green bond segment hence proved to be a solid anchor in turbulent times.

> The war in Ukraine had a massive impact on all four dimensions of sustainability: economic, environmental, social and governance. Its direct and indirect effects widen the sustainability financing gap, making it even more important to mobilise private capital and allocate it through the capital market to sustainable projects with positive impact.

The negative surprise of the year was without a doubt the fall in target-linked (also known as sustainability-linked) bond issuance – both in volume and market share. The 2021 darlings have had a tough time, especially in the second half of 2022, as fears increasingly emerged that such a structure could expose issuers to potential legal risks. In addition, the critical voices among investors and banks grew louder, flagging greenwashing concerns about target-linked debt.

Despite a tough and volatile market environment, there were also bright spots in the sustainable bond market. The new issuance volume of sustainable bonds in 2022 declined less sharply than that of traditional bonds. The share of new sustainable bonds issues in the overall debt capital market therefore continued to rise to around 18% in 2022 (2021:15.8%). Furthermore, sustainable bond issuance from financial institutions surprisingly increased by approximately 21% to around $187.5 billion. Thanks to its resilience, the green bond segment hit the $2 trillion milestone (cumulative issuance since the kick-off of the segment in 2008) at the end of the third quarter.

Lessons learned from 2022

2022 has once again shown that the sustainable bond market is not immune to external shocks. However, 2022 has also been a demonstration of the importance of further accelerating the financing of the global sustainability agenda through capital markets and hence continuing to drive the sustainable bond market forward in the coming years.

The war in Ukraine had a massive impact on all four dimensions of sustainability: economic, environmental, social and governance. Its direct and indirect effects widen the sustainability financing gap, making it even more important to mobilise private capital and allocate it through the capital market to sustainable projects with positive impact. Even before the Russian invasion, the world was not on track to achieve most of the United Nations' Sustainable Development Goals. Unfortunately, many targets will be set back by the new geopolitical situation and, so, even more capital will be required in the future.

Moreover, it is already clear that rebuilding Ukraine will be tied to sustainability. In the "dream of a new Ukraine, not only free, democratic and European, but also fair, green and prosperous" recently quoted by the president of the European Commission Ursula von der Leyen, the sustainable bond market is sure to play an important role regarding funding.

2022 has also been a test for sustainable and responsible investment strategies of fixed income investors. It had inevitably led to a reassessment of ESG investment approaches and sustainable fixed income portfolios as it has not only revealed Europe's high energy dependence on Russia and how vulnerable the global food system is, but also has raised the question of geopolitical sustainability.

The disruption of the global energy markets has caused sustainable and responsible fixed income investors to rethink energy strategies. Does the pace of fossil fuel phase-out need to be adjusted until renewables, hydrogen and storage technologies can fill the gap reliably and affordably? Will nuclear energy and natural gas gain importance as bridging technologies?

Without a doubt, this new thinking should focus on renewable energy sources, energy infrastructure and sustainable technologies to support the transition away from traditional energy sources. Given the "weaponisation of gas", the war is a wake-up call to expedite the global transition to a more secure and cleaner energy future.

The new geopolitical reality has also renewed questions about the sustainability and safety of capital invested in countries with autocratic governments. In theory, an investment in government bonds and an investment in a company based in or conducting business with authoritarian countries should be considered separately. But the boundaries are often not clear. Corporates operating in authoritarian states are typically more exposed to sustainability risks than others operating only in

The new geopolitical reality has also renewed questions about the sustainability and safety of capital invested in countries with autocratic governments.

Markus Pratsch

democracies. Examples include human rights, corruption, and reputational risks. Irrespective of a moral evaluation, such ESG risks have a negative impact on a company's performance.

The war in Ukraine has also brought a controversial ESG discussion back onto the front pages. How should the issue of security and defence be interpreted in a sustainability context? Is defence ESG-compliant? Is "Security the mother of all sustainability" as the Federation of the German Security and Defense Industries argues? How should SDG 16 (peace, justice, and strong institutions) be interpreted in this context? It should already be clear today that for most sustainable and responsible investors arms for defence purposes will not be an option for their portfolios in 2023 either.

Furthermore, in the target-linked bond market, there is growing pressure on issuers to increase the ambition of the targets and the materiality of the pricing benefits and penalties. Using the proceeds of target-linked instruments for general purposes appears to be increasingly at odds with investor and regulatory expectations for greater clarity and consistency of allocation of proceeds to dedicated sustainable outcomes.

Addressing these concerns in 2023 will be crucial to restoring confidence in this important funding structure as a suitable instrument for transition financing. Unlike the use-of-proceeds transition bonds structure, target-linked bonds focus on the transformation of the issuer as a whole and are also suitable for less asset-intensive issuers who do not have the necessary volume for a use-of-proceeds transition bond.

Hence, for credible transition financing using target-linked bonds, it is important to choose KPIs [key performance indicators] that are relevant, measurable, comparable, central, and essential to the issuer's transformation process. They should also have a high strategic importance for the issuer's future operations. In addition, the Sustainability Performance Targets (SPTs) should be in line with the issuer's transformation strategy and be ambitious, i.e., go beyond a "business-as-usual scenario".

A look into the future

The overall bond market appears to be in a much more promising position than it was last year. However, the uncertain macroeconomic outlook and persisting geopolitical risks should still be a concern for fixed income investors. Hence, we do not expect new issuance volumes in the sustainable bond market to go through the roof in 2023. It will not be until 2024 before the sustainable bond market sees record heights in growth rates once again.

But, as investor appetite for sustainable bonds remains strong, we expect a gradual return to growth in all segments of sustainable debt in 2023. It will remain a growing portion of overall issuance and we expect sustainable bond issuance to outperform the broader bond market once again in 2023.

According to our forecast, global new issuance volume will rise by around 36% to surpass $1 trillion in 2023 (2022: $740 billion; 2021: $957 billion). In contrast to some record years in the past, this regained growth will be qualitatively rather than quantitatively driven. We forecast that the share of new sustainable bond issues in the overall market will rise to around 20%.

Drivers and opportunities: the sustainable bond market is heading in the right direction again

In 2023 and beyond, we expect further diversification in the sustainable bond market both by issuers and themes. Investor interest in sustainable bonds remains high. There is still too much demand chasing too little supply. ESG integration in portfolios is further on the rise. And it goes far beyond climate issues. Investors are also increasingly looking at nature-related issues or social issues in their fixed income engagements.

> As investor appetite for sustainable bonds remains strong, we expect a gradual return to growth in all segments of sustainable debt in 2023.

Improving market conditions ensure that maiden issuers who deferred their sustainable funding in 2022 will regain confidence and come to the market with their inaugural issues in 2023. We also expect to see a further pick-up in issuance from emerging markets.

We forecast a strong pipeline in sovereign sustainable bond issuance. India was the latest addition to the growing cohort of sovereign sustainable bond issuers. A couple of maiden issuers like Brazil are waiting in the wings to come to the market this year. Sovereign issuers already established in the market are looking to expand their sustainable funding activities, such as Indonesia, which is planning to issue a blue bond. Sovereign target-linked bonds are becoming increasingly popular among smaller sovereign issuers. Following the success of Chile and Uruguay, it can be assumed that the instrument will establish itself in the market beyond Latin America and that we will also see issuances from Southeast Asia, for example.

With an estimated share of 62%, the green bond segment will remain a guarantor of growth in 2023. We expect new issuance volume to increase by almost 40% to around $620 billion. The new geopolitical reality revealed that accelerating the energy transition is not only key to tackling climate change but that it is also pivotal to ensuring energy security. Hence, growth in the green bond segment will be supported by the policy push towards low-carbon energy projects in key regions like the EU and the US.

Furthermore, we expect that nature-related risk will move up the agenda of green bond issuers and investors. By putting SDGs like "Life on land" and "Life below water" into the sustainable funding focus, the foundation is laid for more and more biodiversity-focused transactions. Growth of the green bond segment is also backed by supportive policies and regulations around the globe. Further steps by the European Central Bank (ECB) to incorporate climate change into its monetary policy, the launch of China's Green Bond Principles or the Inflation Reduction Act in the US are only a few examples.

We expect market participants to rediscover their interest in target-linked structures. We are confident that issuers and arrangers can address the growing concerns of this instrument by focusing on material KPIs and ambitious SPTs to enhance the quality of target-linked financing via the fixed income market and, thus, its credibility.

Target-linked instruments play a key role in transition finance and the need for it to successfully implement the Paris Agreement is undisputed. We cannot achieve a decarbonised and more sustainable world by focusing exclusively on economic activities, business models and sectors that are already 'dark green'. We can have a much greater positive impact on the global sustainability agenda by helping to make 'brown' economic activities, business models and industries 'light brown' or 'light green', rather than painting already 'dark green' activities, models, and sectors one shade greener.

Marcus Pratsch is head of sustainable bonds & finance at DZ BANK AG

Empowering access to funding through sustainable capital markets

By innovating in support of sustainable finance across the funding continuum, the London Stock Exchange is working to make ESG a routine part of how capital markets work, say **Elena Chimonides** and **Shrey Kohli**

Environmental Finance: **What trends have you seen in sustainable fixed income through the London Stock Exchange's Sustainable Bond Market (SBM)?**

Shrey Kohli: In 2022, we saw an economy coming out of two years of Covid restrictions, undertaking a generational change in interest rates, war in Ukraine and, as a consequence, limited risk appetite. Overall, debt capital markets issuance was down 25%. Sustainable debt markets were more resilient, with issuance down about 18% so, as a proportion of issuance, it was higher than in previous years, which was a positive trend. Despite these headwinds, we currently have over 400 bonds active on the Sustainable Bond Market, raising a total of £158 billion ($190 billion) equivalent, with over £175 billion equivalent raised historically by green, social and sustainability (GSS+)-labelled bonds on our markets.

The Sustainable Bond Market has a high footprint of emerging market issuers. In a normal year on the London Stock Exchange, we see about 75% of issuance from developed markets and about 25% from emerging markets, particularly from the Middle East, Asia and Latin America. Last year, it was around the 90% to 10% range, due to limited risk appetite.

We are excited to have worked with issuers across the world on some milestone transactions from emerging markets, despite the challenging macroeconomic environment.

EF: What would you point to as some of the key transactions last year?

SK: Working with issuers to open the sovereign sustainability-linked bond (SLB) markets was a highlight. We worked with the Republic of Chile, which issued the world's first sovereign SLB with a 20-year tranche, indicating their long-term commitment to its strategy; Uruguay, which issued the first sovereign SLB with a step down in coupon payments if it exceeded its targets, as well as a step up if it missed them, substantially diversified its investor base.

Seeing more issuance from regions such as the Middle East was another highlight, where we admitted first-of-a-kind issuances, such as the first bond by the Kingdom of Saudi Arabia's Public Investment Fund and the first sustainable sukuk issuances from banks such as Saudi National Bank and Riyad Bank.

EF: How has the way that the London Stock Exchange works with sustainable debt issuers changed?

SK: In fixed income markets, primary debt exchanges have traditionally acted as regulators and provided the financial market infrastructure, rather than playing a more active role in supporting the raising of capital. However, particularly on these transactions, it is our belief that we were seen as partners on the journey.

For example, with Uruguay's SLB, the government was committed to including two key performance indicators (KPIs) attached to the bond, one linked to emissions and the other to the preservation of native forest area, as well as incorporating a step-down structure for exceeding targets. That required extensive investor engagement well in advance of the transaction, followed by seamless execution during volatile times.

When looking at potential exchange partners, we were able to use our relationships with communities of investors in sustainable debt markets. We were able to support the investor roadshow through our virtual roadshow platform SparkLive when the transaction was brought to market.

We've also been able to provide such issuers with data on peer transactions, and who the active investors are in other sustainable debt markets or what their conventional bonds are, as that is data we have and we can provide to our clients. For example, we offer ESG data covering over 300 data points on 10,000 companies, based in 76 countries, to all our listed issuers through our Issuer Services Platform.

The biggest difference from previous years is that our expectation has been to provide the infrastructure, review documents and provide visibility. Currently, we play a much more active part in the transaction itself and in the journey with the client.

EF: The exchange has partnered with TreasurySpring to enable issuers to tap short-term funding. What was the thinking behind the tie-up, and how does it work?

Elena Chimonides: We are looking to help our clients embed sustainable finance across the funding continuum. TreasurySpring offers short-term financing options to corporates that may not have commercial paper programmes, or only banking relationships for short-term capital. They were very keen to introduce a robust framework for sustainable investing on to their platform. The tie-up enables TreasurySpring to utilise our methodologies and issuer lists.

We will provide an accreditation to recognise sustainable issuers who can raise short-term financing through TreasurySpring. The accreditation is based on three criteria, namely that the company either: has a Refinitiv ESG score of B+ or above, which means that it is ranked in the top third of its peers; is eligible for the Green Economy Mark, which means that at least 50% of its revenues come from green sectors based on the FTSE Russell Green Revenues Classification System; or displays its bonds on the Sustainable Bond Market, in line with the International Capital Markets Association (ICMA) Green and Social Bond Principles 2021.

This provides comfort to investors that, when TreasurySpring lists short-term funding instruments on its platform, they are independently verified. It's about us looking at innovative ways to try and help our clients make sustainability investing an integral part of how they access the capital markets.

EF: You launched your Voluntary Carbon Market last year. How does the market work, and how it is being used?

EC: This is about helping to mobilise as much capital as possible to support the transition to net zero. At this point, the Voluntary Carbon Market (VCM) is focused on investment funds and operating companies. The VCM is a designation that applies to funds and operating companies that are admitted to the London Stock Exchange's Main Market or AIM (Alternative Investment Market), with the intention to invest in climate change mitigation projects that are expected to yield carbon credits. Those funds can then issue dividends as either cash or as carbon credits, which the investors can retire to meet their residual emissions requirements, hold, or sell as required.

In order to be eligible for the designation, there are additional disclosures that funds and companies are required to make over and above the listing rules for the Main Market and admission rules for AIM. These include the qualifying bodies whose standards will be applied to the projects, expected carbon credit yield and the extent to which they are contributing to the United Nations Sustainable Development Goals. As the shares in the funds and companies can be traded, investors can benefit from liquidity that is not available by investing directly into projects.

Shrey Kohli

Elena Chimonides

SK: This may be particularly interesting for corporates as investors who are looking for a medium- to long-term stream of carbon credits as part of their net-zero transition plans, where offsetting is relevant for them. Currently, the process of sourcing carbon credits is not transparent, with a fragmented sell-side of often quite small brokers and advisors, opaque and volatile prices and variable quality of credits. Our VCM designation offers exposure to an asset class where the corporate will directly fund those emission reduction projects, with greater visibility in where and how capital is being deployed, progress across the lifecycle of projects and the provenance of the credits that are generated.

We're in the early stages of building the market but have the ambition to establish a rich ecosystem of funds with different strategies. We have already provided the designation to the first fund – the Foresight Sustainable Forestry Fund – and we're engaging with companies, project developers and investors to develop the pipeline. There's a lot of interest in how this market will develop.

"We need to engage more on policy to ensure that standards are as consistent as possible globally, to keep sustainable debt markets as accessible to the widest set of issuers as possible, with robust standards in order to deal with concerns around greenwashing."
Shrey Kholi

Issuer	Admission date	Terms	Why
The Republic of Chile	14/03/2022	$2bn 4.35% note	World's first sovereign sustainability-linked bond
Uruguay	31/10/2022	$1.5bn 5.75% note	The second sovereign sustainability-linked bond and the first ever to have a coupon step-up/step-down feature. It is tied to two KPIs focusing on GHG emissions intensity as a share of GDP and maintenance of native forest area
Mexico	23/08/2022	$2.2bn 4.875% note on the International Securities Market and the Sustainable Bond Market	Mexico's first US$ sustainable bond linked to the UN SDGs
Public Investment Fund of Saudi Arabia	13/10/2022	Raised $3bn in total from $1.25bn five-year, $1.25bn 10-year and $500m 100-year notes	A triple-tranche green bond that included the first green bond with a century tranche.

2022's transactions of note

EF: The exchange has taken a leading role in developing a green and sustainability sukuk market. How do you anticipate that market developing?
SK: Sukuk markets, which allow companies and governments from the Islamic world to fund themselves in line with their beliefs, have grown substantially over the last decade. In 2010, the market for listed sukuks was worth less than $10 billion, while it had grown to around $100 billion by 2021. Sustainable sukuk has also grown, but it's a small share of the broader sukuk market. In 2021, there was $5 billion of issuance, which is 5% of the whole market.

We think there is enormous scope to grow the market, especially as, by its nature, sukuk is asset-based or -backed – so there's a strong link between the assets that are being funded and the return that is provided to investors. This makes them very well suited to use-of-proceeds bonds.

At COP26, we created a High-Level Working Group on Green Sukuk, with the UK government, the Republic of Indonesia, the Islamic Development Bank and the Global Ethical Finance Initiative. We produced a short report ahead of COP27 at Sharm El-Sheikh, surveying market participants and discussing challenges facing the market.

During the year, it's been very promising to see more sustainability sukuk issues, including Indonesia and the Islamic Development Bank, but also from the likes of Saudi National Bank, Riyad Bank and Infracorp in Bahrain. We're working very closely with the Islamic Development Bank and the Global Ethical Finance Initiative to develop the market, and we're optimistic about there being more issuers interested in the sustainable sukuk format.

EF: What are your plans for 2023 and beyond?
SK: A priority is to provide better data to investors on sustainable finance. We are working with our colleagues throughout LSEG to provide that data via our issuer services platform as well as on our website. We also plan to further our partnership with TreasurySpring, to promote sustainable finance in the short-term funding market, and ensure consistency with the work done at ICMA committees as they refine principles for green financing for commercial paper markets.

There's massive regulatory change underway, both in the UK and the EU, not just related to sustainable finance, but capital markets as a whole. We need to engage more on policy to ensure that standards are as consistent as possible globally, to keep sustainable debt markets as accessible to the widest set of issuers as possible, with robust standards in order to deal with concerns around greenwashing.

EC: Internally, there's a big focus on ensuring ESG is integrated into the capital markets as a matter of course, and that it's not restricted to distinct product areas. As more and more companies look to partner with us in sustainable finance, and as the accreditations we offer are used more broadly in the market, it's important that ESG is something we consider across the board. ■

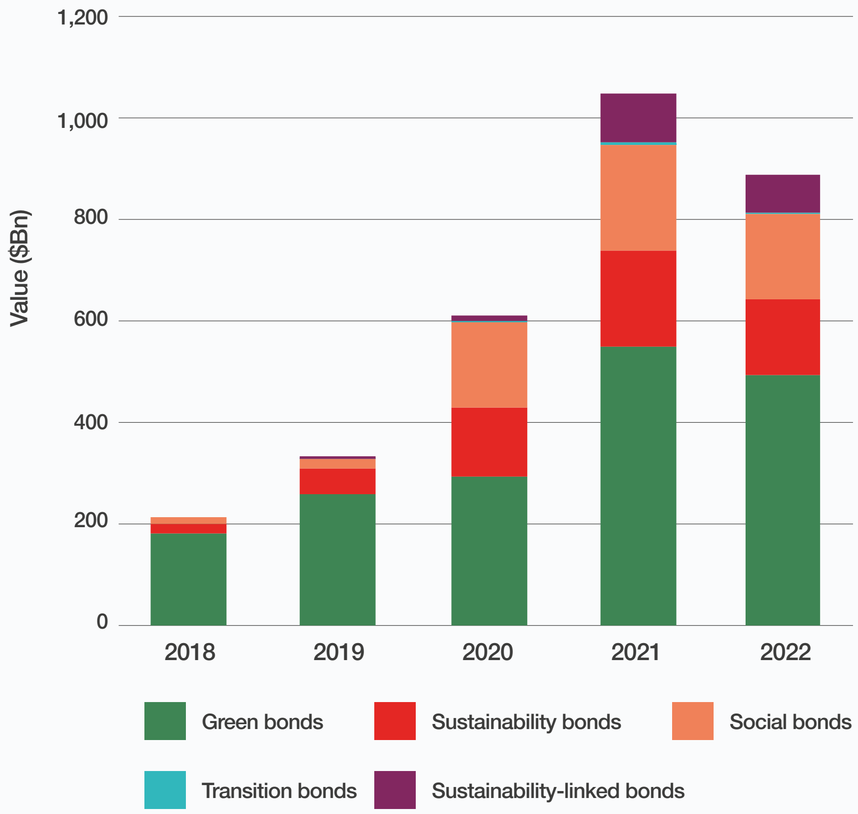
Elena Chimonides is senior product manager, fixed income, and Shrey Kohli is head of debt capital markets and product origination, at the London Stock Exchange Group.

For more information, see: www2.lseg.com/sustainablefinance/sustainablebondmarket

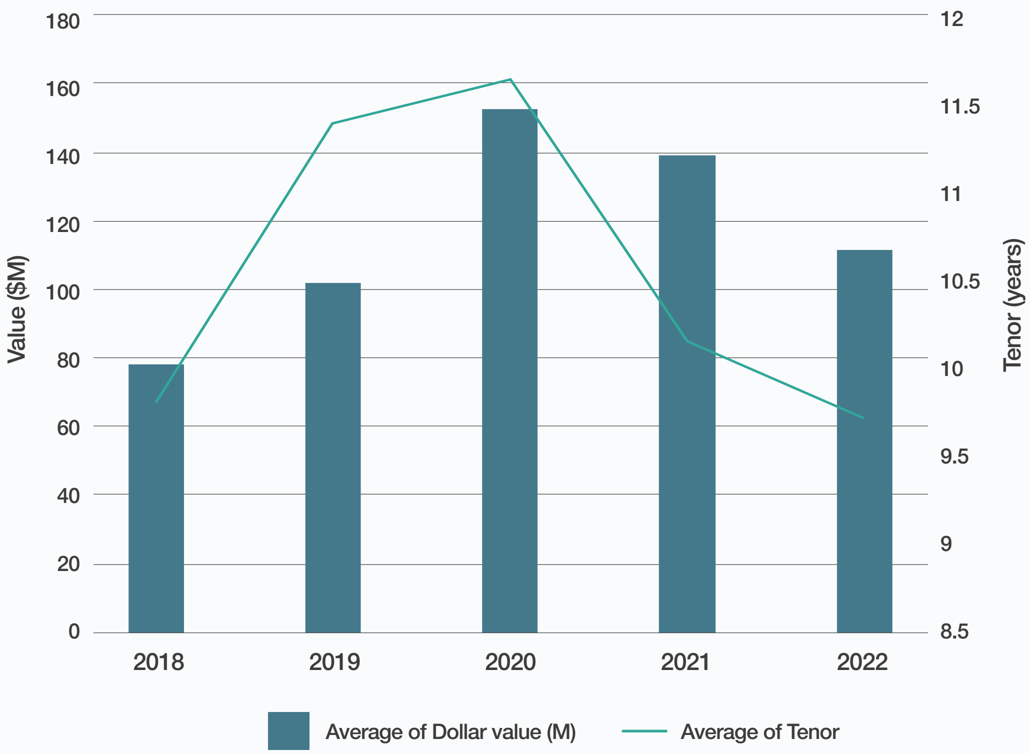
Annual issuance

Sustainable bond issuance saw a small year-on-year decline in 2022 for the first time since 2011. After a record breaking 2021 in which sustainable bond issuance surpassed $1 trillion in the year for the first time ever, 2022 saw a slowdown amidst wider market volatility with issuance reaching just over $880 billion. Issuance was down for every label, including the sustainability-linked label which saw its rapid growth slow significantly in the second half of the year. Green bonds remain by far the biggest label at over $490 billion. 2022 also saw a continuing downward trend of average size and tenor of bonds being issued.

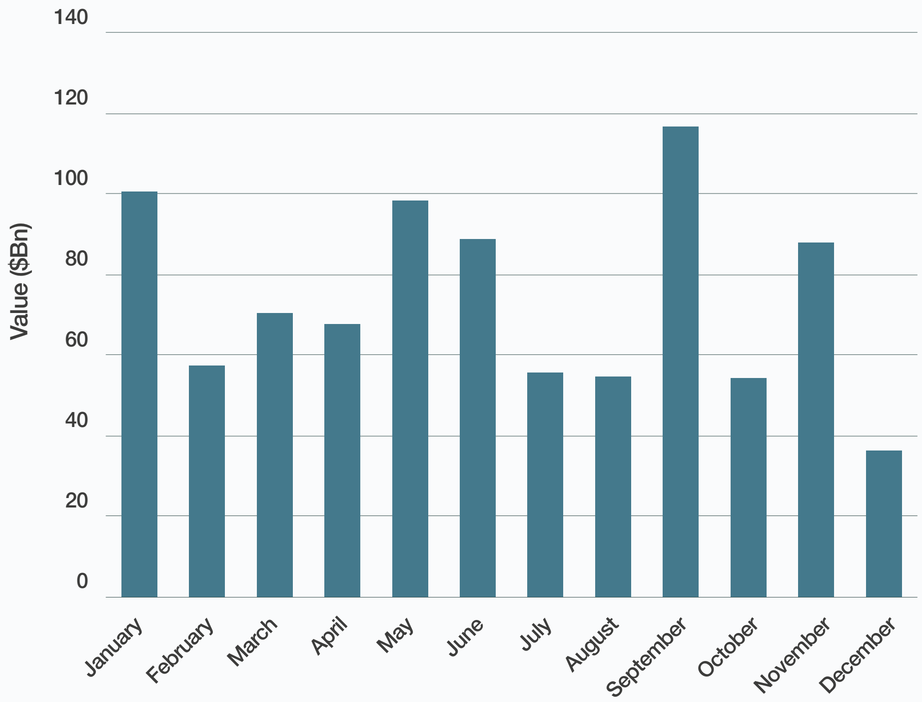
Annual issuance of sustainable bonds



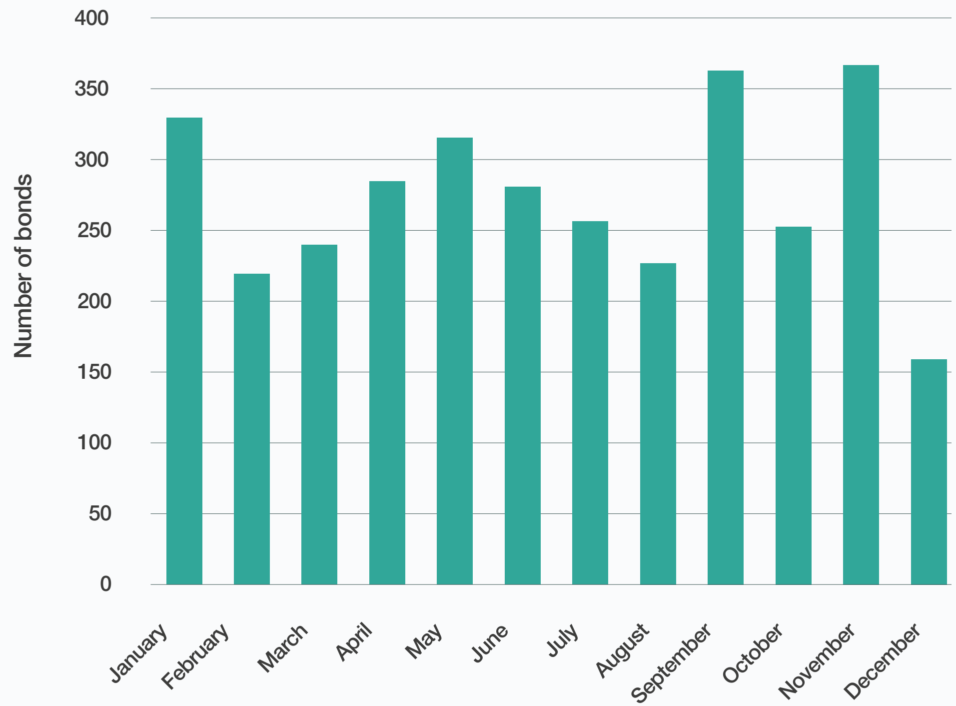
Average value vs average tenor of sustainable bonds



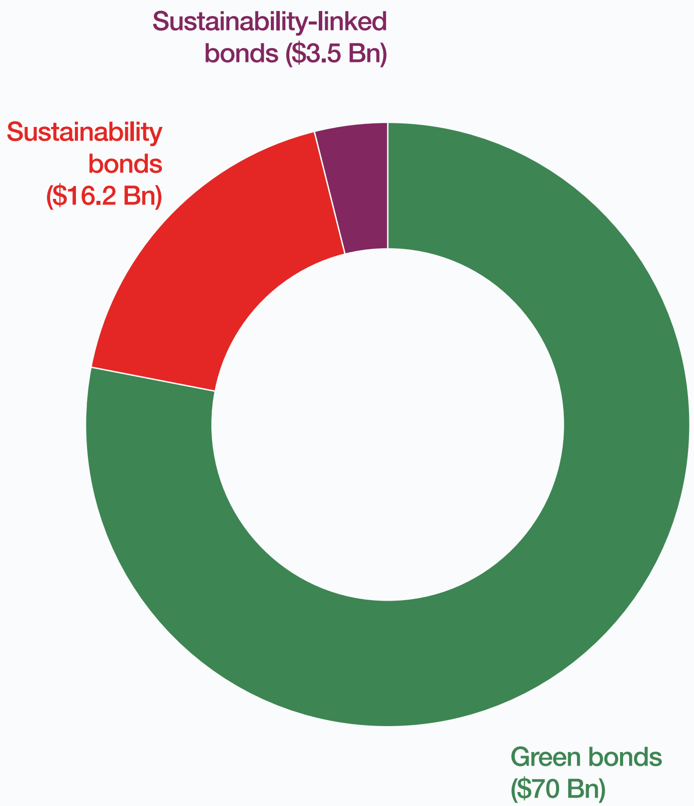
Monthly sustainable bond issuance by value



Monthly sustainable bond issuance by number of bonds



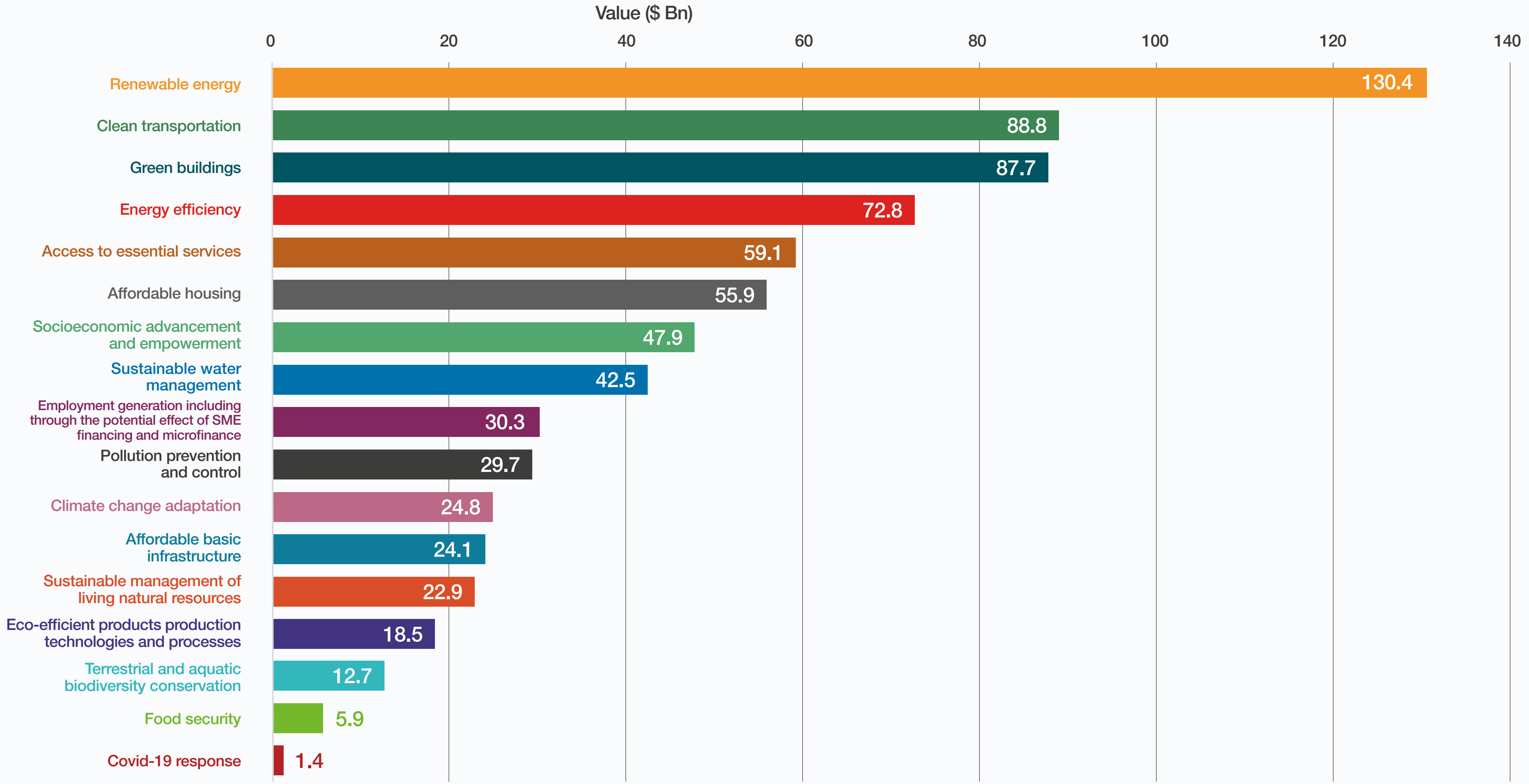
Breakdown of sovereign sustainable bond market 2022



Top lead managers for sovereign sustainable bonds 2022

Issuer	Value ($M)
HSBC	6,881
CRÉDIT AGRICOLE CORPORATE & INVESTMENT BANK	6,096
J.P.Morgan	4,453
BNP PARIBAS	4,344
Deutsche Bank	3,826

Use of proceeds breakdown of bonds issued in 2022 by value



Methodology: the value of bonds with multiple use of proceeds was pro rated equally to each use of proceed.

Top 15 lead managers for sustainable bonds in 2022

Lead manager	Value ($M)
J.P.Morgan	43,813
Bank of America	40,090
BNP Paribas	39,696
Crédit Agricole Corporate & Investment Bank	37,974
Citi	35,875
HSBC	35,008
Barclays	32,796
Deutsche Bank	29,371
Societe Generale Corporate & Investment Banking	24,179
Morgan Stanley	23,954
NatWest	18,782
Goldman Sachs	18,220
Natixis Beyond Banking	16,933
Nomura	16,702
Mizuho	15,720

Methodology: the value of bonds with multiple lead managers was pro rated equally to each lead manager.

Top 5 lead managers issuing in EUR

Lead manager	Value ($M)
Crédit Agricole Corporate & Investment Bank	29,244
BNP Paribas	27,708
Bank of America	21,389
Societe Generale Corporate & Investment Banking	21,125
J.P.Morgan	20,169

Top 5 lead managers issuing in USD

Lead manager	Value ($M)
J.P.Morgan	20,100
Citi	18,564
Bank of America	16,337
Morgan Stanley	12,311
Barclays	11,279

Top 5 lead managers issuing in GBP

Lead manager	Value ($M)
Barclays	3,555
HSBC	3,393
NatWest	3,083
J.P.Morgan	2,018
BNP Paribas	1,794

Lead managers by bond type

Top 15 lead managers for green bond issuance in 2022

Lead manager	Value ($M)
Bank of America Merrill Lynch	22,807
Credit Agricole CIB	21,742
BNP Paribas	21,569
JP Morgan	20,369
Citigroup	16,957
HSBC	16,687
Barclays	16,446
Deutsche Bank	16,324
Morgan Stanley	12,815
ING	11,468
Goldman Sachs	10,278
NatWest	10,002
Société Générale	8,507
Natixis	7,755
Unicredit	7,609

Top 15 lead managers for sustainability bond issuance in 2022

Lead manager	Value ($M)
JP Morgan	12,063
HSBC	9,634
Citigroup	9,383
Bank of America Merrill Lynch	7,853
Barclays	5,332
TD Securities	5,150
Deutsche Bank	4,862
Société Générale	4,760
Morgan Stanley	4,714
Credit Agricole CIB	4,632
NatWest	4,217
Santander	3,875
Natixis	3,775
BNP Paribas	3,661
ScotiaBank	3,578

Top 15 lead managers for social bond issuance in 2022

Lead manager	Value ($M)
Credit Agricole CIB	8.484
Société Générale	7,889
BNP Paribas	7,604
JP Morgan	7,336
Barclays	7,208
Citigroup	6,755
Bank of America Merrill Lynch	6,750
Nomura	6,702
Deutsche Bank	5,927
HSBC	5,049
Natixis	4,239
RBC Capital Markets	4,100
Mizuho Securities	3,669
NatWest	3,661
Morgan Stanley	3,526

Top 15 lead managers for sustainability-linked bond issuance in 2022

Lead manager	Value ($M)
BNP Paribas	6,861
JP Morgan	4,045
Barclays	3,811
HSBC	3,498
Bank of America Merrill Lynch	3,421
Credit Agricole CIB	3,116
Société Générale	3,023
Goldman Sachs	2,960
Citigroup	2,780
Morgan Stanley	2,760
Deutsche Bank	2,258
Santander	2,256
BBVA	2,233
Unicredit	2,070
Mizuho Securities	1,483

Fannie Mae®

A deeper look at Fannie Mae's mission supporting US housing

Meg Parker Young and **Devang Doshi** outline the thinking behind Fannie Mae's first annual ESG Report and the new Single-Family Social Index

Environmental Finance: **What steps is Fannie Mae taking to help create more equitable and sustainable access to homeownership and affordable rental housing?**

Meg Parker Young: As one of the nation's leading sources of mortgage finance, Fannie Mae helps support the creation of housing with the properties we finance. We prudently enable access to affordable housing for households of modest means and for underserved communities, with a strong focus on driving equitable and sustainable outcomes across the housing finance lifecycle.

We know consumers of different backgrounds face various obstacles at different points in their housing journeys, from early financial education, to renting or preparing to buy a home, as well as a household's capacity to stay in their home for the long run. We are focused on improving equitable outcomes and accessibility at each of these points along the way.

Some examples of this work include products and programmes designed to assist first-time homebuyers and very low- to moderate-income borrowers, such as through our flagship HomeReady® product which has a number of benefits, including the flexibility of a low down payment, decreased mortgage insurance coverage costs, and lower costs of borrowing.

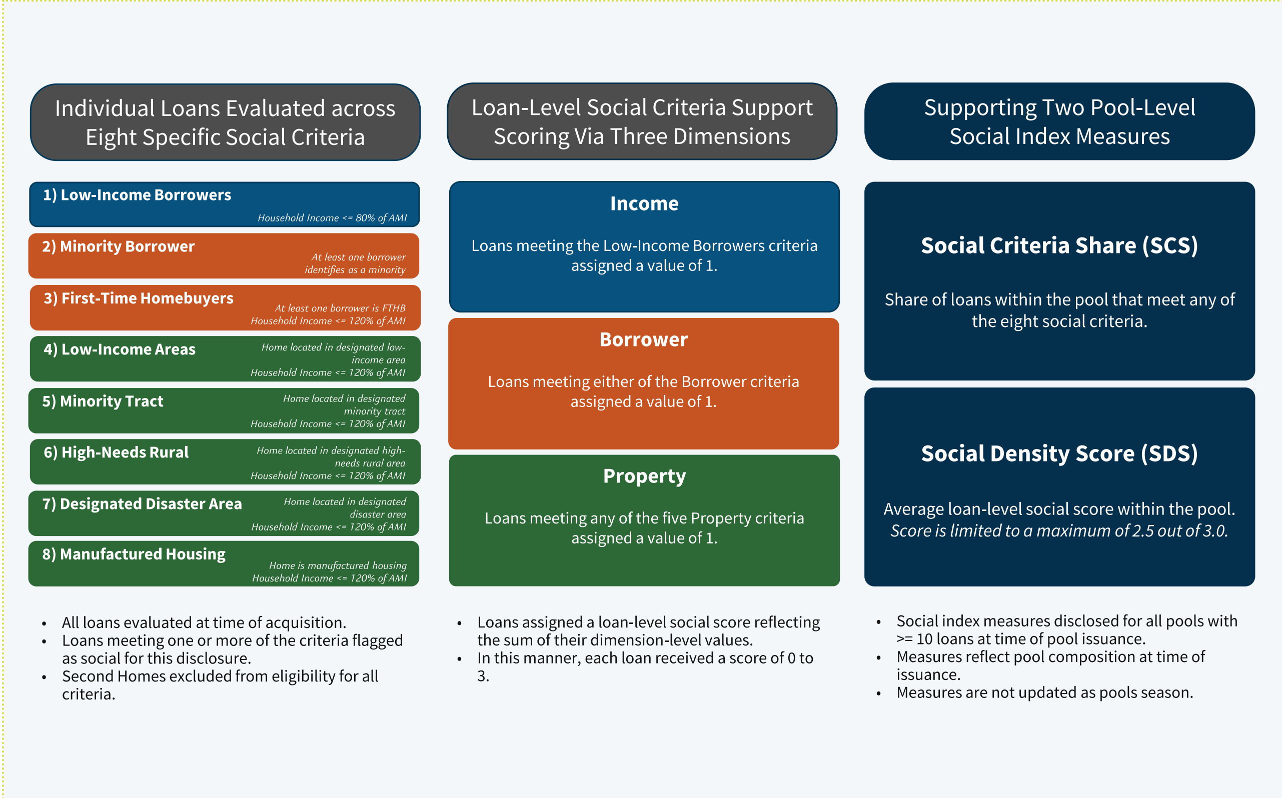
In the US, on-time rental payments are not consistently included in a borrower's credit score, which can impede access to homeownership. To combat this obstacle, we launched the use of positive rent payment history in the underwriting assessment process to help borrowers who have limited credit histories access homeownership.

We look at ways to help prevent foreclosures, including maintaining sustainable credit standards and educating consumers on renting and stable home ownership, especially during economic downturns.


Meg Parker Young


Devang Doshi

EF: Could you outline the work you have done on your Single-Family Social Index? What do you hope to achieve with it?



Social index design overview

Source: Fannie Mae

Devang Doshi: As an issuer of mortgage-backed securities (MBS), we take the 'G' in ESG very seriously. In this context, borrower privacy is a key component of our governance considerations.

In many securitised product sectors, the loans comprising a security are made to individual borrowers. This dynamic presents a unique challenge, as information desired by investors to evaluate their investment can be combined with other publicly available data and tied to a specific individual. This is also the case for single-family residential mortgages. By contrast, in multifamily residential financing, a lender underwrites a rental property. Any insights about tenants are aggregated at the building level, and not specific to the individuals in the units.

The Social Index aims to balance providing investors insights from the data behind our single-family residential MBS issued while still maintaining the privacy of the borrower in the underlying mortgage pool. Social investing can consider many sensitive data elements, such as income, race, ethnicity, and property location, that should not be explicitly disclosed in an environment where borrower re-identification is a reasonable risk.

Through the Social Index (and other planned disclosures), we hope to be able to give investors comfort that their MBS purchases are exerting a positive aggregate influence on access to credit and the economic circumstances of all borrowers meeting the Social Index criteria. This is achieved by influencing lenders to focus on all borrowers who meet these criteria.

With the Single-Family Social Index, we have designed a solution that helps protect borrower privacy, while championing socially oriented lending and giving investors salient data insights in a marketable, consumable fashion.

EF: How can investors use your Single-Family Social Index?

DD: In alignment with our mission, we included eight criteria which reflect socially oriented lending activities that support affordable housing and access to credit. These criteria also reflect the interest we've received from investors seeking social investment opportunities.

We provide two disclosure measures per pool to provide investors with information regarding how many loans meet the socially oriented lending criteria defined in the index, and how many of those loans may meet multiple criteria.

The Social Criteria Share (SCS) is the share of loans within the pool that meet any of the eight social criteria. If it meets one or more criteria, the loan is considered socially oriented for purposes of this disclosure.

The Social Density Score (SDS) is the average loan-level score within the pool, which indicates concentrations of socially oriented lending activities by acknowledging some loans meet multiple criteria across the three dimensions of income, borrower, and property-type.

While these disclosures are intended to provide further transparency into socially oriented lending consistent with Fannie Mae's mission, they also provide insights into how loans may prepay, which is the largest measure of securities

Fannie Mae®

performance in Agency MBS.

The SCS and SDS scores are now displayed on the main Bloomberg screen for all conventional MBS pools – we hope this indicates that these scores will become industry standard measures of social concentrations within MBS pools as investors contemplate social impact as a routine component of security evaluation in this market segment.

It's important to note that while these pool-level disclosures may support investors in determining which pools may meet their socially minded investment criteria, we are not labelling any pools as Single-Family Social Bonds. We continue to consider feedback from investors, second-party opinion providers, and other market participants to determine how to approach potential labelled issuance.

EF: What informed your decision making?

DD: First and foremost, our objective was to balance investors' desire for incrementally more information to guide investment decisions, while considering the risk of exposing non-public (and potentially sensitive) information of borrowers in the mortgages underlying our securities.

Second, we felt responsible for the pivotal role Fannie Mae plays in US housing. We recognise that our disclosures often set standards in the market and we want to ensure that our approach is enduring and solves the objectives we're seeking. That outcome, over time, is to increase access to mortgage credit for underserved households and individuals.

While it is early days, we're hopeful that we've introduced a responsible solution that meets these criteria.

EF: What has been the market reception so far?

DD: Fannie Mae has received a great deal of positive feedback for being courageous enough to take the first step to propose a solution. Beyond affordability, there is no consensus on what 'social' looks like for the mortgage market – and little standardisation for securitised products more broadly beyond the MBS market.

When we first introduced these data disclosures, we went back and scored nearly every Single-Family MBS since January 2010. Immediately, we generated an abundance of data that could be made available for socially oriented investors. In every subsequent auction of newly securitised pools with a high percentage of mission-oriented lending, we have seen an increase in investor participation. We believe we are demonstrating that there is considerable private, socially driven capital available to the mortgage market in the US.

We appreciate that the Social Index may not provide the granularity that some investors may seek. However, the trading and execution of these securities is suggesting that the approach is working: the market is voting with its dollars.

We also continue to seek ways to further support market adoption, including potentially providing additional reporting and insights into socially oriented lending using the Social Index.

EF: What has been Fannie Mae's approach to ESG reporting?

MPY: This is an exciting time at Fannie Mae when it comes to reporting. Our ESG report builds on Fannie Mae's ongoing commitment to transparency and data-driven disclosures.

Our 2021 report was the first that explicitly demonstrated how our mission drives the way that we prioritise and execute on environmental, social, and governance issues – and how it relates to our stakeholders – while providing robust data that align to global and international frameworks where possible. We report in alignment with SASB [Sustainability Accounting Standards Board] standards and the Task Force on Climate-Related Financial Disclosures (TCFD) framework, and we look forward to continuing to innovate in our reporting to drive deeper understanding of Fannie Mae's mission and impacts over time.

EF: How has your impact reporting approach evolved?

MPY: We were proud to be an early mover and a big innovator in the green bond space and we've been disclosing projected impacts from Fannie Mae green bonds that date back to 2012. We provide transparency into estimated environmental, social and economic benefits of those green bonds.

We have seen increasing interest from investors to understand the impacts for our Multifamily Social Bonds – labelled bonds we first launched in 2021. And, through the disclosure of the Social Index correlated data, we're looking forward to being able to give increasing visibility on Social Index parameters on the single-family side as well.

For Fannie Mae, social impact is our bread and butter. We will continue our work to increase visibility into the social impacts of our work, and hope to spark greater industry conversation and understanding of the consumers and their housing journeys across the US that this work supports.

EF: What are your plans for 2023?

DD: We remain focused on how to ensure that the Index or labelled Single-Family Social Bonds can improve borrowing costs and liquidity for underserved borrowers. We've also had requests from investors to provide a 'fairness score' for our mortgages. They want to know if loans were made on equitable terms and if the mortgage rate is consistent with the market prevailing rate. We are working on how to bring in that dimension.

MPY: We have taken the time to really understand the issues that are of highest importance to Fannie Mae, our stakeholders, and the broader housing marketplace - and how we can drive impact through those. So, this year is all about execution. In particular, we are digging into the intersecting issues of housing stability, racial equity, climate risk, and other factors affecting housing and the environment, and the specific role that we can play to create efficient and effective market conditions that support equitable outcomes.

These issues cross geographies, generations, and socio-economic status, and will require ongoing engagement, partnership and transparency of objectives and outcomes. We are excited to continue moving forward in this important work. ■

Meg Parker Young is vice president, ESG strategy, and Devang Doshi is senior vice president, capital markets – Single-Family Products at Fannie Mae.

For more information, see: www.fanniemae.com/about-us/esg

Berlin Hyp sets its sights on social impact

With the creation of its social programme last year, Berlin Hyp has added another dimension to its ESG strategy. Bodo Winkler-Viti describes the firm's ESG journey that led it to this point

***Environmental Finance:* Could you outline what you have achieved with your social bond programme?**
Bodo Winkler-Viti: With creating our social programme in 2022 we have added the missing link to our ESG strategy. Until then, we only focused on the 'E' in ESG. We began our ESG journey with the issuance of a green covered bond – our Green Pfandbrief – in 2015. From there, we created a family of labelled lending products that focused on environmental aspects. Then, in 2021, we issued our inaugural sustainability-linked bond, which also focused on an environmental strategic performance target. Adding the 'S' to our ESG allows us to be a holistic sustainable financier of commercial real estate.

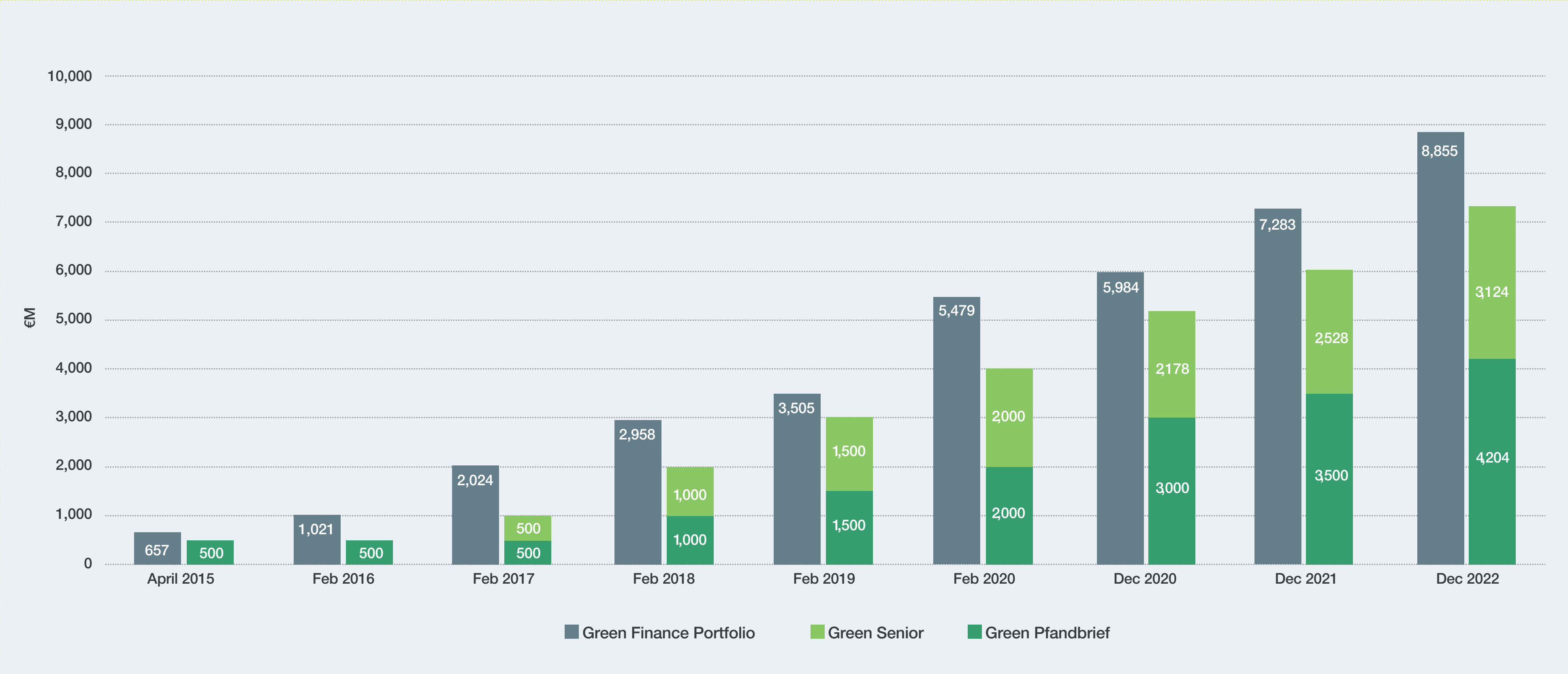
EF: What was your experience issuing social versus green?
BWV: The preparation took a lot longer for our social issuances. Perhaps our experience with green bonds also made it more difficult for us to create a Social Bond Framework because we had to take a holistic view on eligible assets in affordable housing. We wanted to create a social bond that takes environmental aspects into consideration by making sure that the social assets eligible under our framework were not harmful for the environment. We also wanted to make sure that we didn't spoil the good reputation we already had with our environmental products. It took approximately two years to get all of that in place.


Bodo Winkler-Viti

In some ways, there have been several similarities between our first green bond and our first social bond. Both were covered bonds and rather long dated; seven years for the first green covered bond and 10 years for the first social covered bond. They both offered very attractive pricing in the market as well. The first green bond came in at a record mid-swap rate of -16, while the social bond mid-swap rate came in at +2 which, at the time, was very good rate as 2022 was a difficult year for the issuance of long-dated bonds.

Both were heavily oversubscribed – four times oversubscribed in both cases. The inaugural green bond had an order book of €2 billion ($2.2 billion) for a €500 million bond, while the order book of the first social bond had an order book of €3 billion, convincing us to do a €750 million transaction instead of a €500 million transaction to satisfy the interest that we saw on the product.

EF: Have you experienced a 'greenium' or any other benefits?
BWV: In 2015, discussions around the 'greenium' were



Berlin Hyp's green finance portfolio

relatively new and we didn't have enough evidence to claim one at that point. However, when we look at pricing indications ahead of issuing a conventional bond versus ESG bonds now we see one or two basis points of a funding advantage for our covered green bonds. With our senior unsecured products – preferred and non-preferred – the funding advantage is as high as three to five basis points. With our social bond, assuming you still call it a greenium for a social bond, we have also experienced a pricing benefit.

With ESG bonds in general we feel we experience more execution security, making the whole execution process much easier for the issuer. That is a key benefit.

EF: How are you preparing to report on your social bond? What are the challenges in impact reporting on social versus green?

BWV: Our aim is to provide our first allocation and impact reporting on our social bond programme by the end of March 2023. Allocation reporting on green versus social is similar. However, when it comes to impact reporting there are big differences. Our eligibility category for our social bond is affordable housing in Germany and the Netherlands. We have spoken to many investors about what they expect us to report on. They want to hear how many beneficiaries per million invested there are, how big the region is that has been financed and how many units of affordable housing there are. Data availability is a challenge – as it is with some environmental project categories as well – especially if you want to benchmark it alongside another metric e.g., average rents in a specific area. You have to get hold of a lot of different data sources to provide something that is meaningful and provides a baseline that is beyond doubt.

EF: How has your ESG journey evolved since you first issued a green bond? Has it fundamentally changed the business in any way?
BWV: It has changed the business in a profound way. In 2015, there were no blueprints for us as we were one of the first commercial banks to issue a green bond. Plus, it was the first ever green covered bond.

At the time, any asset that had a sustainability certification at a certain level we deemed an eligible asset. We learned very quickly that while investors appreciated our efforts to take our first steps with a green bond, our lending criteria were not precise enough.

Our board had such a good experience with the first green bond, our discussions around green loan offerings led to the inception of our green price advantage for clients of Berlin Hyp. Since 2016, Berlin Hyp has offered a price invective of 10 basis points to finance green buildings. This pricing scheme was extended in 2022 when we launched a new environmental loan product – our taxonomy loan. It is more than a regular energy efficiency loan because it includes all relevant technical screening criteria and the applicable Do No Significant Harm (DNSH) criteria and minimum social safeguards of the EU taxonomy. Social loans are incentivised, too.

All these incentives highlight that the bank feels it is important to support ESG activities. And, it made us more competitive in the market. As a consequence, we increased our green finance portfolio from €657 million in 2015 to almost €9 billion. Likewise, on the social side, we started with an affordable housing portfolio of just over €2 billion at the end of 2021 and we will soon report a positive development in 2022.

Another very important development has been the inclusion of specific ESG targets in our corporate strategy. It began in 2017 with a goal for 20% of loans for green buildings in our overall loan book by 2020. We achieved this early, and we then came up with a more comprehensive ESG vision. This included alignment with the Paris Agreement and a net-zero commitment for our lending portfolio by 2050. This formed the basis for further sustainability targets in our lending activities. For example, between 2020 and 2040 we plan to reduce the carbon intensity in the portfolio by 40%. We have also increased the targeted proportion of green loans in our overall loan book to be a third by 2025.

We also set a target that, by the end of 2023, energy performance certificate (EPC) data must be recorded for all the buildings that we finance, so that we can ensure accurate data for our loan monitoring system, rather than using a proxy. We are 65% of the way there as of January 2023.

We have also set a target that 40% of Berlin Hyp's refinancing should come from ESG bonds by 2025, be it green, social or sustainability-linked.

The ESG elements in our corporate strategy have also had an effect on the remuneration system at Berlin Hyp. Bonus payments are linked to reaching ESG targets and everyone has a stake in reaching those targets – from the board to the department heads to staff all along the value chain.

The above shows how important ESG products and decarbonisation of the whole business have become for a bank like ours.

EF: What lessons have you learned since you issued your first green bond?
BWV: We have learned that the journey to increasingly sustainable product offerings will likely never end. You must constantly work to create new products and improve existing frameworks and make them more robust. We are in a constant dialogue with investors to learn what they expect from us and to hear how the market is evolving. As a result, we have revised our criteria for green bonds several times. And we are undertaking more and more detailed reporting.

Our social bonds framework isn't even one year old yet and we have already come up with a second iteration, which we will publish with our first impact report. We want to be a state-of-the-art issuer and reflect that in our framework by keeping it up to date.

EF: Given that we've been living in a high-interest rate and high-inflation environment, how has that impacted Berlin Hyp's work in affordable housing?
BWV: The German Housing Benefits Act was updated in 2022 to partially compensate people for rising energy prices. That means our social bond target population increased as the pool of housing benefit beneficiaries grew. We have updated our social bond framework to reflect that and now the affordable housing product can serve a much wider target population than it was originally designed to reach.

EF: What are your plans for future ESG issuances?
BWV: At the beginning of this year we issued our first dual tranche ESG bond consisting of a three-year social bond and a 10-year green bond. This was very exciting. We expect we will come to the market again this year with either a green or a social bond.

We now have three ESG categories we can offer in the market and in the near future we may start to look at other ideas for ESG bonds. We will certainly have to come to the market with issuances regularly if we are to reach our 40% target of ESG refinancing by 2025. In the meantime, we will continue to focus on being successful in what we are doing already and continue to improve our offerings. ■

Bodo Winkler-Viti is head of funding & investor relations at Berlin Hyp. Email: bodo.winkler@berlinhyp.de

For more information, see: www.berlinhyp.de/en/sustainability/mission

°CICERO Shades of Green now a part of S&P Global

A return to growth for the sustainable bond market

S&P Global Ratings sees the sustainable bond market roaring back in 2023. *Environmental Finance* talks to Dennis Sugrue, Lynn Maxwell and Christa Clapp, as her firm CICERO Shades of Green joins the S&P Global family

***Environmental Finance*: What are S&P's expectations for the sustainable bond market in 2023?**

Dennis Sugrue: We expect to see a rebound in issuance. There was a 19% reduction in issuance in 2022, down to around $850 billion. However, we're expecting that volumes this year will recover to the range of $900 billion to $1 trillion – around the mark that was reached in 2021 and resuming the levels of growth that we saw between 2018 and 2021.

It's interesting to note that, for this year, we're expecting only modest growth, of just under 3%, in the overall bond market. This means that we're expecting sustainable bonds to start to take a larger share of the total market – estimated between 14-16%.

We've identified three themes that we think will drive this return to growth. The first is around regulation and transparency initiatives. The second is the need for more investment in climate adaptation and resilience, which we saw coming out of COP27. The third is a recovery in the sustainability-linked bond (SLB) market. That part of the market – which drove a lot of its growth in recent years – saw a contraction in the second half of 2022 compared with the same period in 2021.

It's at an inflection point: we've seen a lot of criticism from investors, academics and even policymakers over the credibility of this sub-class. If the market can address those concerns, we see the potential for sustainability-linked bond issuance to resume its upward trajectory.

Dennis Sugrue

Christa Clapp

EF: What influence do you think initiatives around regulation, policy and transparency will have on sustainable bond issuance?

Christa Clapp: We're certainly seeing a lot more scrutiny, from social media, journalists and investors, who are asking more questions about whether various issuances are truly green or sustainable. This is a healthy part of the checks and balances that exist in the market. As investors become more savvy, and ask more questions, that could drive more of the market: it has been the case for years that investor demand for robust, green-labelled products has been higher than supply.

In the medium term, we also see transparency regulation encouraging market growth. In the EU, for example, directives around sustainable finance and corporate disclosure require companies to disclose the extent to which what they are doing is sustainable. That means that they've done their homework – they would be prepared to come to the sustainable bond market if they need debt financing in future.

Sustainability-linked bonds share of GSSSB declines for first time

Note: Excludes structured finance issuance. GSSSB - Green, social, sustainability, sustainability-linked bonds. Sources: Environmental Finance Bond Database, S&P Global Ratings

The third element we're seeing is national policy. Whether it's encouraging electric vehicles, as Norway, where I'm based, is doing, or making building codes more sustainable, lots of countries are pushing their economies in a greener direction. That will help drive issuance in the sustainable bond market.

EF: What role can the sustainable bond market play in helping to answer the call from COP27 for more investment in adaptation and resilience?

DS: The sustainable bond market has really not been focused on adaptation and resilience as much as climate change mitigation. But, given calls at COP27 for more investment in adaptation, we could see issuers turning to the sustainable bond market to raise financing for adaptation and resilience, bringing new issuance to the market.

Part of the challenge is that adaptation, as a proportion of climate finance, has long been lagging compared with what we see on the mitigation side. UN Environment Programme (UNEP) has estimated we're going to face $140-300 billion in adaptation costs by 2030. We're a long way from financing that.

One issue is with defining the types of projects that are eligible, with a lack of awareness from an issuer perspective on the type of projects that can help with climate change adaptation, and how to structure them in a package that's suitable for investors.

Further challenges include identifying benefits and cash flows, and the potential for mismatch between those financing projects and those who benefit from them.

CC: The public sector and the multilateral development banks have a really important role to play here. In many cases, local governments are at the forefront of the impacts associated with climate change, like extreme heat waves, precipitation, hurricanes, forest fires, etc. There are rising public costs associated with these disasters, which are often borne by the city or municipality.

An interesting example of a sovereign looking at this area is India, which published its national green bond framework a couple of months ago and which includes an adaptation financing category. It specifically calls out that financial assistance to state and local governments, giving examples of forest fire prevention, water storage, public awareness measures and early warning systems – so a mix of information, preparedness and built infrastructure.

We're also seeing some large corporates beginning to pay attention to this area, especially if their supply chains are vulnerable. Some are looking at raising financing for material use and for building in climate resilience, for example by making sure that built infrastructure can handle increased risk of flooding and heat stress.

EF: There has been a lot of scrutiny of the fast-growing sustainability-linked bond market. What are your expectations for that segment in 2023?

DS: Compared with use-of-proceeds bonds, issuance in the SLB market tends to more closely track trends in the broader bond market: as we noted, we're expecting limited growth there in 2023.

In addition, there are other market pressures on SLB issuance. There are some very big questions being asked of issuers and arrangers. They want to know, for example, that these bonds incorporate ambitious targets, and that they don't contain call dates that allow the issuer to exit without paying penalties for missing targets. Issuers and arrangers will have to look at how they address some of these concerns.

Lynn Maxwell

CC: This scrutiny is very much linked to that being applied to corporate net-zero targets. It's in everyone's interests to ensure that companies are setting meaningful targets and following up on them. This should not be a checkbox exercise. Some investors want to see more context around the targets: they want to see a company's KPIs, the timing of reductions, the use of offsets and the integrity of those offsets. When it comes to assessing ambition, the devil is in the detail.

DS: All that said, we see the SLB market as offering a path to sustainable financing for a broader set of issuers than that which can access the use-of-proceeds market. To the extent that investor confidence can be restored, the SLB market could resume the levels of growth we've seen in recent years.

EF: How do you see the role of Second Party Opinion (SPO) providers evolving?

Lynn Maxwell: The market is moving into financing new technologies, into new applications like adaptation, and we're increasingly seeing more complex structures, such as securitisations or project financing vehicles. What I'm hearing from investors and lenders is strong demand from SPO providers to provide detailed analysis on these novel technologies and structures.

SPOs mitigate the information asymmetry that arises when an arranger markets a bond. An investor might get 24 or 48 hours to make an investment decision, and that's where a second party opinion can be really useful. The investor will do their own analysis, of course, but there's huge value that an independent SPO can provide in terms of scrutinising these structures and investments.

Bringing CICERO Shades of Green into S&P Global

EF: In December, S&P Global announced the acquisition of SPO pioneer CICERO Shades of Green. What was the motivation for the deal?

LM: Our view has always been that a SPO provides a similar benefit to the sustainable debt markets that a rating brings to credit – it's about bringing analysis, information and insight to the market, and helping to address information asymmetry. Even before the acquisition of CICERO Shades of Green, S&P has grown this part of our business quite significantly, increasing the number of SPOs we produced from 24 in 2020 to more than 110 in 2022.

We always had a great deal of respect for the high-quality analysis carried out by CICERO Shades of Green, which was the earliest entrant in the green bond market and an expert in climate and environmental analysis. So, we reached out to them to talk about a partnership, and soon found out we had really strong alignment in terms of our own approach and culture. The conversation quickly turned towards acquisition.

CC: We were brought in to the World Bank deal to provide the SPO on the first green bond in 2008 because we were completely independent and research-based. Those two elements continue to underpin what we do at Shades of Green, and we found great synergies with S&P that allow us to scale up our potential impact. I've been really impressed with the people and processes at S&P, and that speaks to the integrity and robustness of their analysis.

One of the things that was important for us was to continue to keep our links with our not-for-profit former parent, CICERO Research Foundation. We've formalised that to allow for regular updates on climate science, access to climate researchers, and the possibility of doing joint research.

EF: What synergies have you found between your two companies?

LM: One of the advantages of the acquisition was our ability to overlay the regulatory construct that we have at S&P, where our commercial and analytical functions are clearly separated. This allows our analysts to perform their work completely independently.

There are other areas of complementarity from a commercial perspective. Shades of Green is strong in the Nordic region and in Europe more widely. It is also strong with sovereign clients and other public sector entities, including multilateral institutions. With S&P, we have a much bigger global reach. Before the acquisition, we had approximately 60 sustainability focused analysts. Adding the CICERO analysts broadens our climate and sustainability knowledge base even further.

EF: What are your plans for the combined business?

LM: At the moment, it's business as usual as we integrate Shades of Green. But we're assessing the different products we have in our two organisations, and we're going into the market to get some feedback on those before we finalise the product mix. We're going to get a sense of the direction that the market is going in and the demands that investors are bringing to us. We feel like we've got the expertise, so now we're making sure we've got the products that investors need.

Dennis Sugrue is senior director sustainable finance, and Lynn Maxwell is regional head (EMEA) commercial and global head of marketing, at S&P Global Ratings. Christa Clapp is managing director sustainable finance at CICERO Shades of Green, now a part of S&P Global.

For more information, see: https://www.spglobal.com/ratings/en/products-benefits/products/second-party-opinions

NRW.BANK: Celebrating 10 years of ESG action

As NRW.BANK celebrates the 10-year anniversary of its green bond programme Frank Richter and Christian Hardt outline what is next for the development bank as it deepens its ESG approach on both the funding and investment side of the business

Environmental Finance: **How has NRW.BANK's green bond programme evolved over the last decade?**
Frank Richter: We started our green bond programme in 2013. At the time, we were the first issuer from a German jurisdiction to do so. Our approach has always been not only to fund our green projects but to also develop market standards to broaden and deepen the green finance market.

Our milestones achieved over the last 10 years include:

- In 2014, we sourced a second party opinion (SPO) to confirm the environmental benefits of our green projects.
- The following year we joined the International Capital Market Association (ICMA) Green Bond Principles initiative.
- In the same year, our first impact report was published. Since then both SPOs and impact reports have become cornerstones of our green bond programme.
- Since 2021, we have issued our green bonds in line with the EU Taxonomy and Green Bond Principles, as defined by the Technical Expert Group (TEG) on Sustainable Finance.

NRW.BANK has not just evolved in the green bond market in qualitative terms either. Volume of issuance matters when working towards a 1.5°C target and NRW.BANK's green bond programme has grown substantially in the last couple of years.

Frank Richter

Christian Hardt

In 2022, we mobilised €1.5 billion ($1.6 billion) in green bonds – a record level for us.

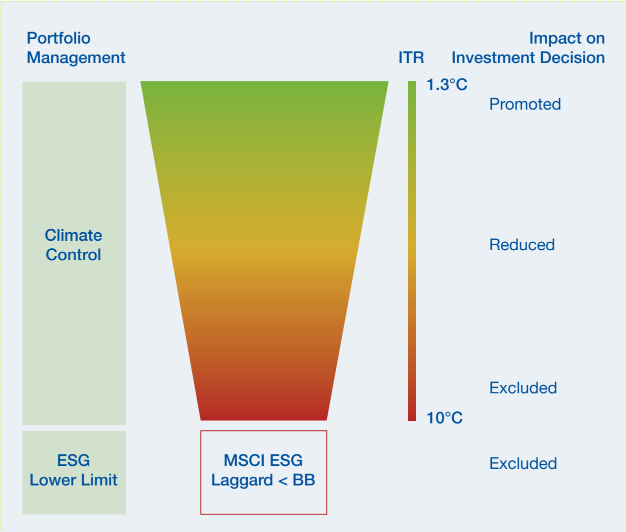
All these efforts have paid off and we were one of the first issuers to be rewarded by the market for these high-quality bonds via a 'greenium'. As a non-profit-maximisation institute, we passed the greenium on to the lending side, thereby encouraging more borrowing to be used for green projects.

Since 2020, our taxonomy-aligned projects have enjoyed an additional interest advantage of between three and five basis points.

EF: What lessons have you learned over the last 10 years?
FR: Credible issuers who follow a coherent ESG strategy and set ambitious (climate) targets, while providing an open dialogue and transparent reporting, can enjoy a very warm reception from investors. Given the current pricing differential between green and conventional bonds, issuers are being compensated for their efforts.

To achieve maximum benefits, we have learned an issuer has to adapt to new market standards as quickly as possible. For example, once the EU finalises the new EU's green bond standard (GBS), we will issue green bonds In line with this standard.

EF: Your social bond programme has been running since 2020. What are the main priorities of the programme?
FR: The social bond market is an 'emerging' market in comparison to the more established green bond market. Efforts from (public sector) issuers to counter economically unintended consequences and manage the health issues resulting from the Covid-19 pandemic were a catalyst for growth in the social bond market. Market participants now acknowledge the importance



ESG-related management of the corporate portfolio

of 'S' as well as the 'E' in the sustainability concept of ESG.

In contrast to the Covid-focused issuances, our social approach was broader. It combined pandemic recovery elements with other social issues.

Our programme operates under the ICMA Social Bond Principles. In contrast with the green bond programme - where we make use of the loan-to-bond approach - we follow a pool-to-bond approach on the social side. There is no link between an individual loan and a single social bond.

In January 2022, the programme was upgraded as we published an updated framework. Since then, the social bond pool consists of loans for:

- Social cohesion via affordable home ownership – targeting young (lower) middle class families;
- Labour market – targeting the demand side via SMEs and targeting the supply side via education facilities (kindergartens, schools, universities);
- Healthcare sector – targeting vulnerable groups via hospitals and care homes;
- Economically disadvantaged municipalities – targeting underserved citizens in order to equalise living conditions;
- Regional resilience via disaster management capacities.

EF: What have been the challenges in impact reporting on the social bond programme?

FR: Reporting on the social side is much fuzzier and more complex. Green reporting is focused on science-based CO_2 savings. You can debate which benchmark suits you best.

Impact reporting for our social bond programme is based on the Theory of Change (ToC) metrics. ToC metrics establish an outcome-pathway and defined intermediate goals.

The availability of data is key if you want to measure the outcome of your inputs. Looking at our affordable home impact we see that we have reached approximately 1500 units for vulnerable groups and provided a financial relief of up to €450 a month per household.

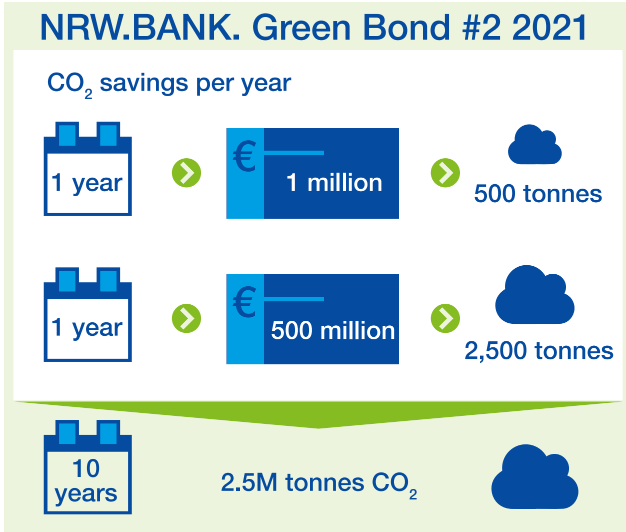
Looking at our impact in the labour market, approximately 40,000 new jobs have been created annually from the loans to SMEs incorporated in the asset pool.

We still have to improve on the impact analysis for our lending to the education sector and municipalities. Nevertheless, we are walking along a path, and it is important to keep on moving as we try to improve year-on-year.

EF: On the investment side of the bank, you have been developing an ESG investment framework – can you outline the work that has been conducted there?

Christian Hardt: Sustainability is a central guiding principle and a key criterion for NRW.BANK's decisions on business policy. We are aware of our responsibility as an investor to support the transformation of society towards a climate-neutral economy.

The framework enables us to describe our current ESG approach in more detail. We had done this for many years in labelled funding with our green and social bond framework so, we thought, why not have a framework for the investment side as well? The framework enhances the transparency of the integration of ESG criteria in our investment portfolio – which is a fixed income portfolio investing mainly in sovereigns, supranationals and agencies (SSAs), financial



CO_2 savings calculated by Wuppertal Institut

institutions and corporates.

The framework provides information about our objectives regarding the six Principles for Responsible Investment (PRI) and the expectations of our stakeholders. It also outlines our approach for achieving a climate-neutral investment portfolio by no later than 2045.

We apply a mix of thematic investing, norm-based exclusions, best- and worst-in-class screening and forward-looking portfolio management. We also engage with the companies we invest in that fail to prevent or address social or environmental controversies in line with established expectations for Responsible Business Conduct.

The framework complements our green and social bond frameworks and enhances the sustainability integration of NRW.BANK's capital market activities.

EF: What have been the main challenges in the integration of sustainability criteria in the investment portfolio?

CH: Each component faces individual challenges. But the general challenge is to define a harmonised concept that considers all asset classes within a very dynamic environment. We face diverse stakeholder expectations and evolving regulatory and supervisory requirements while simultaneously facing a lack of international standards and heterogeneous data sources. It is a very tricky exercise.

In this environment, it is a major challenge to select the right parameters. For the time being, NRW.BANK is convinced that the consideration of established market standards – but also widely applied ESG ratings, scores and other services of renowned providers of ESG data – is the most sensible approach.

Selecting ESG scores and ratings involves thorough research to understand their individual strengths and weaknesses. While ESG rating provider offerings are far from harmonised, that does not mean that they do not add tremendous value. The research behind the ratings and scorings simply cannot be done ourselves.

Another challenge is the general harmonisation of ESG integration and expectations, not only in the portfolio management itself but also for our overall sustainability strategy, credit analysis and risk management. All business units must be involved to ensure a holistic approach. Even though we have integrated ESG aspects since 2017, this is still quite new terrain for all of us. Continuous exchange is necessary, and we have implemented a working group for that.

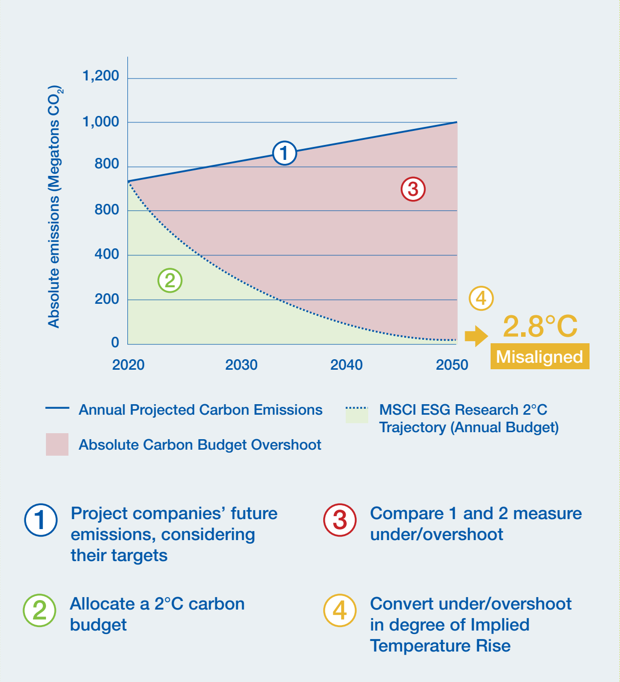
EF: How will the framework inform your investment process and strategy?

CH: The framework is designed for those stakeholders interested in details of our ESG investment approach and is a base for corresponding reporting requirements. In addition, it sheds light on methodologies of scorings and classifies them where necessary.

We are convinced that transparency is key. And we hope that the framework will receive feedback that can then be incorporated into the development of our ESG strategy. We have to learn from each other, and transparency is essential for that.

We think that the framework is the perfect way to outline our current approach and ideas. For instance, we selected a KPI [key performance indicator] that considers climate risks but also the transition efforts of companies. We think it has the potential to become a market standard. It is called Implied Temperature Rise (ITR) Metric and is recommended by the Portfolio Alignment Team of the Task Force on Climate-Related Financial Disclosures (TCFD) and applied by MSCI ESG Research.

It is a forward-looking estimate. It is designed to help investors seeking an investment strategy aligned with the Paris Agreement, as it shows the temperature alignment of companies. The metric is used as a first step to manage our corporate portfolio in line with the Paris Agreement and we will apply it to other asset classes if possible. As pointed out before, market standards are still missing, thus transparency is key to correctly classifying our ESG integration approach.



Calculation basis of MSCI research's ITR indicator

Source: MSCI ESG Research

EF: What can the funding side of the bank learn from the investment side and vice versa when thinking about NRW.BANK's ESG approach more broadly?

FR: Funding and investment are intrinsically linked. Both sides learn from each other. For instance, it is important that both issuers and investors have a clear strategy. If we are in an allocation process in the primary market, investors following a clear green mandate are very welcome. We try to green the entire supply chain from the projects to the issuer, to the bond, to the investor.

CH: We started our ESG approach on the funding side and investors are material stakeholders in this. The feedback we receive informs our ESG investment strategy. The funding side also benefits from the investment side as we can outline what is important for ESG-focused investors. One example is ESG ratings. They are relevant for many investors and a fundamental component of our ESG investment approach. Thus, we are able to focus on the right information in investor meetings and presentations.

EF: What are your plans for 2023?

FR: Aside from aligning our green bond programme with the upcoming new gold standard – the EU GBS, investors can expect NRW.BANK to be a frequent issuer of EUR-denominated green and social bonds. If we have the opportunity to do more this year, we will.

CH: On the investment side, we are focusing on analysing ways to apply a Paris-aligned portfolio management approach to other asset classes. In addition, we will continue to evaluate the relevant ESG management parameters – which are based on MSCI ESG Research's scores – with other providers. The observation of market developments and regulatory and supervisory requirements remains a core task. ■

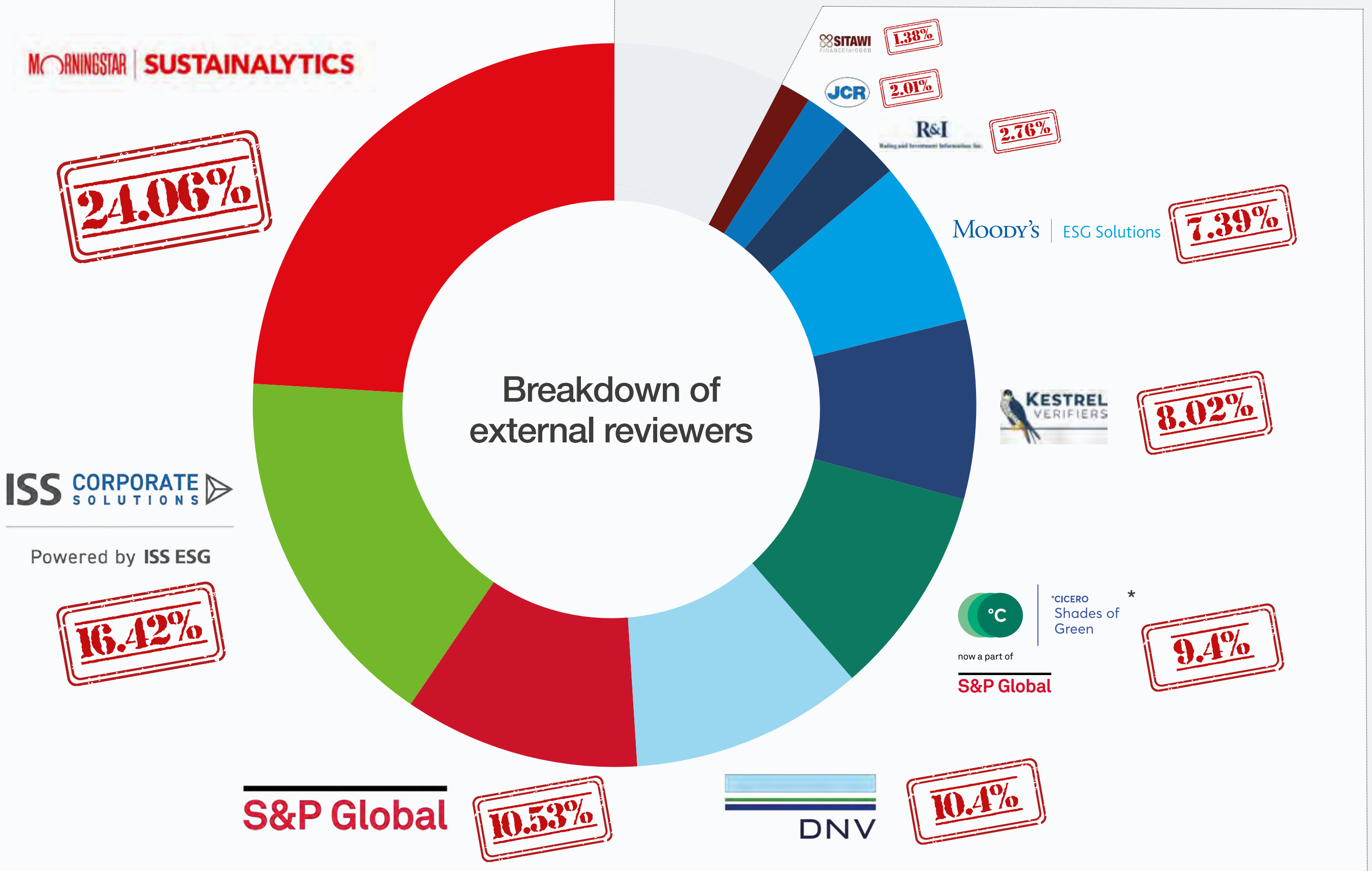
Christian Hardt is a senior specialist for sustainable finance & ESG at NRW.BANK.

Frank Richter is head of investor relations at NRW.BANK

For more information, see: www.nrwbank.de/en/about-us/sustainability/

In 2022, EUR and USD remained the largest currencies that sustainable bonds were issued in. However, their share of the market has continued to decrease. GBP slipped down to the sixth largest currency with its share falling from 5.45% to 3.04% of market share while CNY took its place as the third largest currency with 5.19%. The total number of currencies that sustainable bonds were issued in rose to 44 in 2022 up from 36 in 2021.

External reviewer share of the green, social and sustainability bond markets 2022 (by number of issuers).

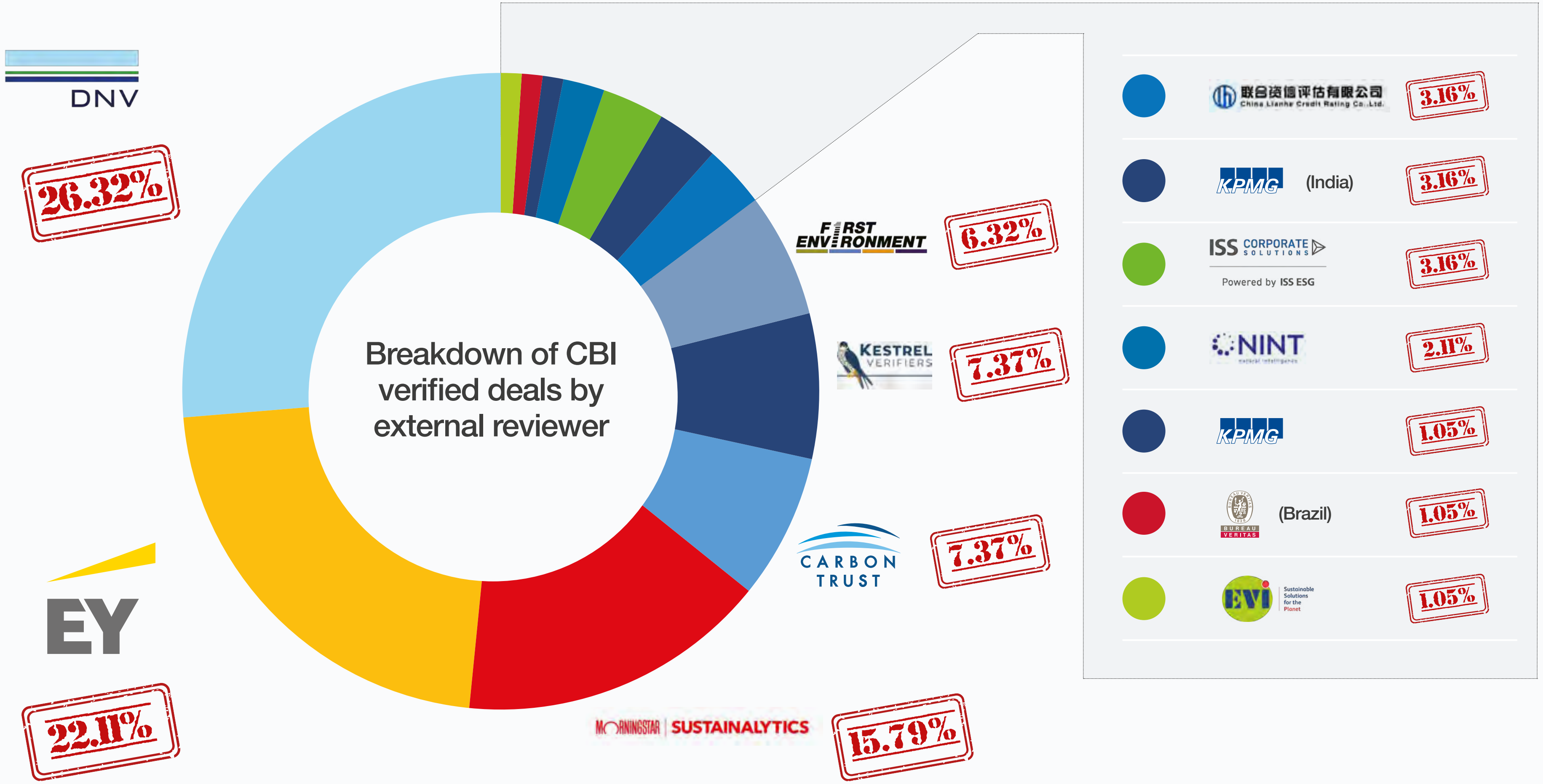


Sustainable Fitch	1.00%
imug	1.00%
NINT	0.75%
FIX SCR S.A.	0.75%
Scope	0.63%
Resultante	0.50%
Fitch	0.38%
Pacific Corporate Sustainability	0.38%
RAM	0.25%
Bureau Veritas	0.25%
IBIS ESG	0.25%
HR Ratings de Mexico	0.25%
Carbon Trust	0.25%
Deloitte	0.13%
HKQAA	0.13%
UNTREF ACR UP	0.13%
Anhou Jianye United Accounting Firm	0.13%
Metsims Sustainable Consulting	0.13%
First Environment	0.13%
Class International Ratings	0.13%
NICE Investors Service	0.13%

Methodology: market share is calculated by the number of Second Party Opinions (SPO) produced by a SPO Provider in 2022. This figure includes new and updated Second Party Opinions issued in 2022.
*On December 1, 2022, S&P Global acquired Shades of Green from CICERO

External reviewer share of CBI verified deals

Breakdown of CBI verified deals by external reviewer.

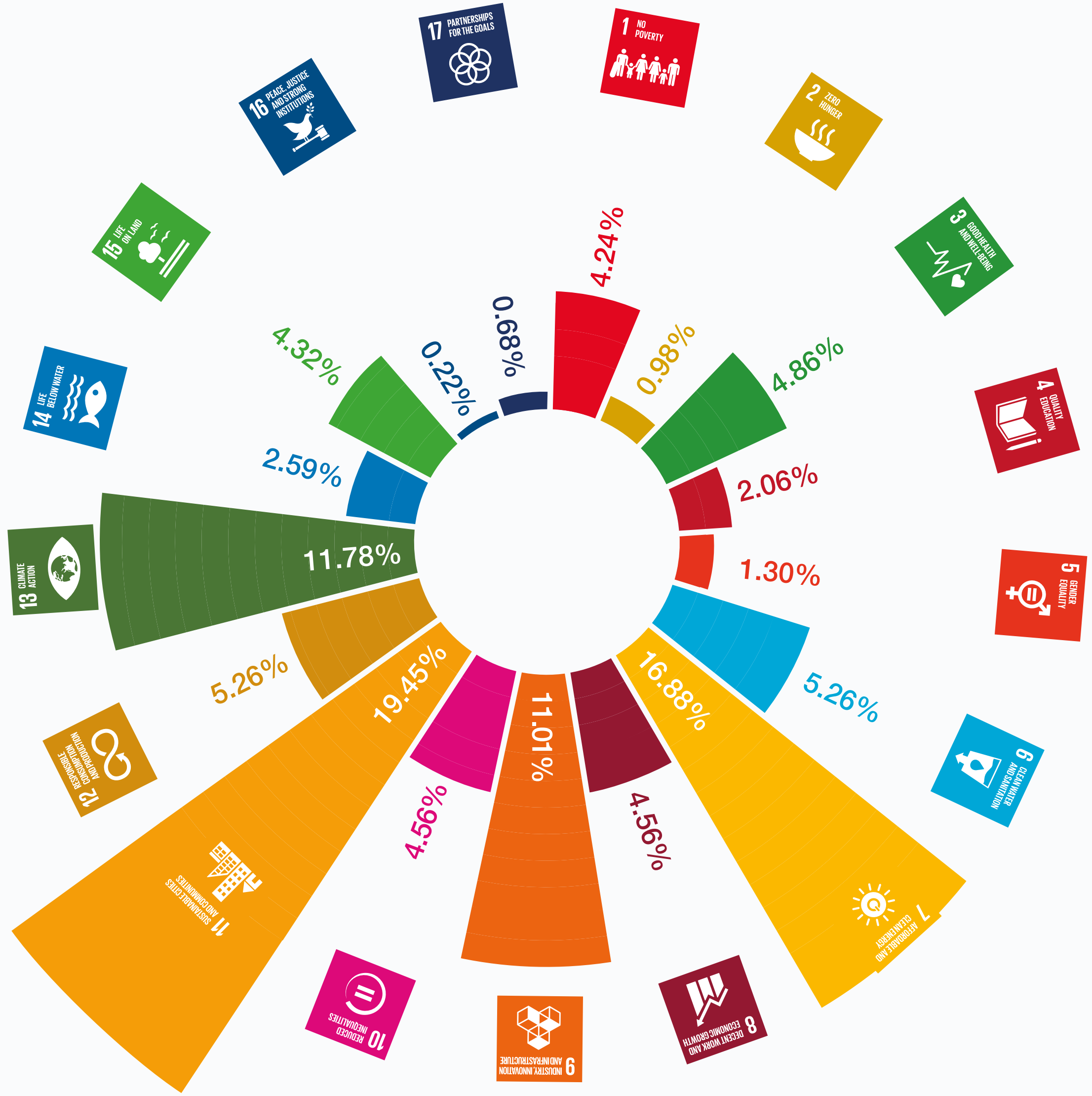


Methodology: External verifier coverage of CBI deals has been calculated by number of deals covered by each external verifier.

Breakdown of bonds aligned with the SDGs in 2022

The most funded UN Sustainable Development Goals (SDGs) in 2022 were once again dominated by SDGs associated with green projects. The top 3 most funded SDGs in 2022 - which included Goal 7: Affordable and clean energy, Goal 11: Sustainable cities and communities, and Goal 13: Climate action – accounted for 48% of SDGs funded, up from 46% in 2021.

Funding for Goal 3: Good health and well-being, continued to fall as a share of sustainable bond issuance, down from its peak of 16.3% in 2020 and its share of 9.6% in 2021, to a share of 4.9% in 2022. Funding for this SDG was inflated by COVID-19 response bonds and is now reverting to its pre-pandemic market share. In general, social SDGs make up the least funded SDGs, with the bottom 5 SDGs - Goal 4: Quality education, Goal 5: Gender equality, Goal 2: No hunger, Goal 17: Partnerships for the goals, Goal 16: Peace, justice and strong institutions – all targeting social goals.



Methodology: the value of bonds with multiple SDGs was pro rated equally to each SDG.

Coupons

Average coupons have risen significantly over the course of the year. In Q1, 2022 coupons were on average around 2.85% but in the second quarter they jumped over 90bps on average to 3.76%. Coupons continued to rise in Q3 to the highest they have been on average for the five year period at 3.9%. In Q4 they continued the upward trend, rising by an additional 53 basis points to 4.43%. Notably, in the second half of the year rising coupons have broadly coincided with many central banks raising interest rates.

Average coupon of sustainable bonds by quarter

	Average of coupon
2018	3.65%
2019	3.27%
2020	2.63%
2021	2.59%
2022	3.75%

Push and pull in 2023

The sustainable bond market will rebound from 2022 – but it faces a number of near-term headwinds, say Adriana Cruz Felix, Jeffrey Sukjoon Lee and Matthew Kuchtyak of Moody's Investors Service

***Environmental Finance:* What are your expectations for sustainable bond issuance in 2023? Could we see volumes return above $1 trillion?**

Matthew Kuchtyak: It's a mixed picture, with the global green, social, sustainability and sustainability-linked (GSSS or sustainable) bond market facing a combination of drivers and constraints. Our forecast is for around $950 billion of sustainable bond issuance, excluding loans, or around a 10% increase from last year.

We expect about $550 billion issuance of green bonds – the biggest individual component of the market – with a continuing focus among issuers and investors globally on climate mitigation. We expect a slight decline in social bonds to $150 billion, as many of the pandemic-response financings by governments and agencies are now in the rear-view mirror.

We predict some growth in sustainability bonds, to about $175 billion of issuance, as growing awareness of the interplay between green and social considerations takes hold, and as more issuers package green and social objectives together under sustainability-labelled frameworks and instruments.

Finally, we expect about $75 billion of sustainability-linked bonds (SLBs) globally – a very small tick up from last year. It's still a nascent market, and it's navigating some challenges in terms of building credibility and standardising best practice. But we predict modest growth, with issuers focused on making the SLB label work effectively, particularly within transition sectors.

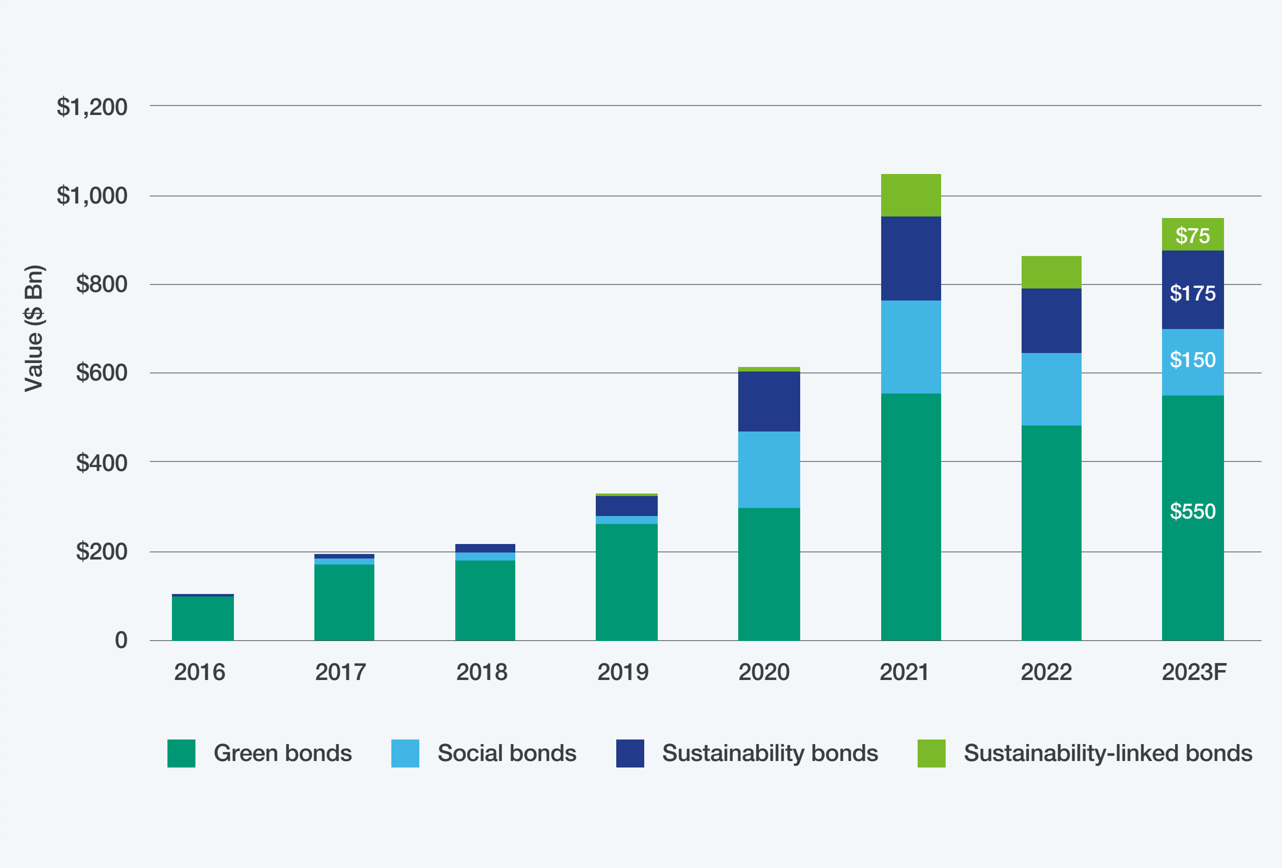
Matthew Kuchtyak

Jeffrey Sukjoon Lee

Adriana Cruz Felix

While sustainable bond volumes will not return to 2021 peak levels, the long-term fundamental growth drivers remain in play. These include the acceleration of corporate decarbonisation plans and related financing of net-zero ambitions, growing public sector interest in financing broader sustainable development goals, and rising investor pressure on companies to enhance their sustainability disclosures.

But there are some near-term constraints that we think will limit the upside in 2023. On the macro front, a challenging economic growth and interest rate environment may dampen issuance momentum, particularly in the first half of the year. And heightened concerns over greenwashing could cause



Sustainable bond volumes to rebound to $950 billion in 2023 but trail record volumes

Sources: Moody's Investors Service and Environmental Finance Data

some issuers to take pause.

While these drivers and constraints lead to a mixed story for 2023 issuance, what remains clear is the long-term penetration and influence of sustainability in the capital markets. Sustainable bond volumes continue to reach new highs in their share of the broader bond market, with a record 13% of global bonds being labelled as sustainable in 2022. We anticipate that sustainable bonds will reach an approximate 15% share of full-year global issuance in 2023 as market penetration deepens.

EF: How will transition finance evolve in the coming year? Could we see the transition label grow in popularity?

Jeffrey Sukjoon Lee: Transition bonds – as distinct from commonly used use-of-proceeds green bonds or sustainability-linked instruments – are not widely used by issuers globally. However, there's emerging interest in the transition label in the Asia-Pacific region, because of the carbon-intensity of many economies and strong policy support to finance decarbonisation agendas.

For example, Japan's Ministry of Economy, Trade and Industry has published guidelines on climate transition finance and a sector-specific technology roadmap over the past couple of years. The government also subsidises the assessment costs that issuers face when issuing transition debt under its guidelines and roadmap. We expect such policy momentum to help drive transition debt issuance from Japanese corporates.

Similarly, in China, the National Association of Financial Market Institutional Investors announced the launch of a low-carbon transition bond pilot programme in June 2022, to provide guidance to eight carbon-intensive industries.

Elsewhere, we are also starting to see signs of harmonisation in green and sustainable taxonomies. For example, Singapore's Green Finance Industry Taskforce has published the second version of its taxonomy, which is well-aligned with the ASEAN taxonomy and leverages a traffic light approach that classifies activities into green (environmentally sustainable), amber (transition) and red (harmful) categories. The approach will provide greater clarity to corporates issuing transition debt in the region. We expect Australia will also adopt a similar traffic light approach and include a transition category in its upcoming taxonomy.

EF: Will heightened market concerns about greenwashing weigh on investor demand this year, especially for sustainability-linked instruments?

MK: We saw a meaningful pullback in SLB volumes in the second half of last year. This was, at least in part, due to heightened scrutiny around greenwashing risks and market concerns around whether issuers are selecting credible, ambitious and rigorous targets and financial variations in instruments (in the event that targets are missed).

Adriana Cruz Felix: In recent years, market collaboration has played an important role in developing standards and principles that ensure the integrity and credibility of thematic debt instruments. However, as the market has grown, we've seen investors apply greater scrutiny in assessing transactions, and a larger number of critics of greenwashing have emerged. Going forward, given higher potential reputational risks, issuers are likely to take more time when structuring sustainability strategies and financing frameworks to ensure alignment with international objectives.

Market standards and solutions are being developed to address the SLB market's growing pains. For example, when it comes to emissions-related key performance indicators, or KPIs, there are various initiatives that issuers can align with to demonstrate that they are following a decarbonisation pathway in line with the Paris Agreement goals, such as the utilisation of science-based targets. We expect to see this approach gain traction with a broader array of material sustainability challenges beyond greenhouse gas emissions. We also expect to see innovation around the financial variation embedded in instruments to ensure that any financial penalties for failing to achieve targets are meaningful and promote the real-world advancement of sustainability. This year, in short, the focus will be 'quality over quantity'.

EF: What steps can issuers take to allay market fears around the quality of their sustainable debt instruments?

JSL: When we speak to prospective issuers, there is generally a clear desire to align financing frameworks and related commitments with a credible and coherent sustainability strategy and transition plan.

What's more, investors don't expect companies to transition overnight. But they do want to see a credible strategy, and to understand how such plans will be implemented and financed.

We expect external reviews, notably second party opinions, to gain in popularity across regions, as issuers seek to demonstrate the credibility of their sustainable financing strategies.

Moody's second party opinions assess both the contribution to sustainability of a financing framework or instrument, and its alignment to international principles. To determine contribution, we look at the relevance of financed projects or targets to the issuer's business, as well as the magnitude of expected impact. We also take into account an issuer's ESG risk management and the coherence of the framework with the issuer's overarching sustainability objectives.

By setting up credible frameworks and leveraging external reviews, issuers will increasingly seek to enhance their communication and engagement with investors and mitigate potential reputational risks.

EF: How will an ever-more complex ESG regulatory and political landscape globally affect issuers' decisions to enter the sustainable bond market?

MK: It's not a uniform picture. We're seeing increasing disclosure requirements and elements of standardisation in some markets – for example via China's Green Bond Principles and the forthcoming EU Green Bond Standard – which will likely lend support to sustainable bond market activity. In some states in the US, however, companies are facing pressure to exclude or minimise the integration of ESG considerations in their business and investment decisions. This may already be having an effect in the US.

While US sustainable bond market issuance has gone up in absolute terms, its share of the global market has fallen, from 25% in 2017 to around 13% in 2022. Last year, issuance from US nonfinancial corporates fell 32%. While this trend was not entirely driven by the broader regulatory and political backdrop, it could have been a contributing factor.

EF: What are some of the emerging trends to look out for in the labelled bond space?

ACF: The market to date has been driven mainly by climate change mitigation initiatives. However, there are a number of important themes – such as climate adaptation, biodiversity protection, sustainable management of natural resources and other social topics – that have been seen less in the market, in some cases due to challenges over financing related projects at scale. Led by the public sector, we expect to see greater diversification of use of proceeds into these other areas.

We also expect to see a much greater focus on just transition – which seeks to maximise the socioeconomic benefits of decarbonisation while minimising negative impacts – and we are starting to see some examples of related projects in sustainable bond frameworks. Such initiatives are not widespread yet, but in time more companies that are transitioning towards a net-zero future will include just transition elements in their plans.

Public-private sector collaboration will be key, and international conversations both at COP27 and the biodiversity COP15 have focused on the enabling role that blended finance from multilateral banks and supranational agencies can play in directing finance from advanced to developing countries.

JSL: To put the need into context, there are 45 million people in Southeast Asia alone that still do not have access to electricity. Addressing these types of social issues is likely to involve blended finance mechanisms.

Because the projects involved are typically relatively high risk, we expect to see public sector or multilateral issuers raise transition debt to finance the equity and mezzanine tranches, catalysing private players to participate in less risky parts of the capital structure. Blended finance will therefore be very important to crowd in private investment and narrow the sizeable sustainable development financing gap in emerging Asia. ■

Adriana Cruz Felix, Jeffrey Sukjoon Lee and Matthew Kuchtyak are vice presidents of sustainable finance at Moody's Investors Service. They are based in Paris, Singapore and New York respectively.

For more information, see www.moodys.com/spo or email howtogetrated@moodys.com

Capital Markets

Sustainability matters: RBC's key themes for 2023

Sarah Thompson, Moses Choi and **Stefano Vitali** from RBC Capital Markets' Sustainable Finance Group map out their ESG themes for 2023

January 2023 marks four years since RBC Capital Markets launched its Sustainable Finance Group. As the team reflects on the tremendous evolution across the sustainable finance market during this time, they review the key themes that could define progress in the year ahead.

Disclosure

The evolution of the sustainability disclosure landscape is a key theme to watch in 2023, with a global baseline for disclosures anticipated to be finalised by the International Sustainability Standards Board (ISSB) towards the end of Q2. This should bring a renewed focus to the connection between sustainability and financial value creation while helping to address greenwashing concerns by increasing the transparency and reliability of sustainability disclosures.

Additionally, the US Securities and Exchange Commission (SEC) proposal – unveiled in March 2022, to enhance and standardise climate-related disclosures for investors – would require reporting companies to include certain climate-related disclosures in their registration statements and periodic reports. The proposal is also anticipated to help accelerate the breadth of companies reporting.

"The SEC received more than 15,000 comments on the proposal. While there is broad agreement that uniform rules could benefit businesses (reducing costs of compliance) and investors alike, Scope 3 emissions disclosure remains a contentious issue," says Moses Choi, director, sustainable finance at RBC Capital Markets.

For many companies, the proposed disclosures are in line with what they currently provide under the Task Force on Climate-related Financial Disclosures (TCFD) framework and Greenhouse Gas Protocol. The key change will be a shift towards more standardisation, consistency and comparability.

In Europe, investors and issuers are also preparing for an increased set of disclosure requirements coming from the Sustainable Finance Disclosure Regulation (SFDR) Level 2 standards and the Corporate Sustainability Reporting Directive (CSRD), which expands the scope of non-financial reporting requirements for financial institutions and companies.

Recent guidance from industry bodies – including the International Capital Market Association (ICMA) KPI registry for sustainability-linked bonds (SLBs), new definitions for green securitisation, and new resources for climate transition finance – should also play a critical role in helping to bolster disclosure and mitigate greenwashing concerns.

There are also challenges in the market around the ambition and materiality of key performance indicators (KPIs) in bonds and loans still to be solved.

"Investor demand for standardised and comparable KPIs is driving the growth of third-party players such as SBTi [Science Based Targets initiative] and ESG consultancies that support companies in developing their science-based targets," says Stefano Vitali, director, sustainable finance at RBC Capital Markets.

"Further to this, as limited and/or reasonable assurance is a requirement of the Sustainability-Linked Bond Principles (SLBPs), demand for these services will see further growth going forward."

ESG Integration

Another major theme is the idea of "a great reset" for ESG integration and sustainable finance.

In 2022, investor, regulatory, and public scrutiny of corporate sustainability commitments and strategies translated into enhanced attention to quality and integrity in the sustainable finance market. An evolving disclosure landscape and a renewed focus on financial materiality and value creation are expected to draw further attention to these issues in the year ahead.

"As market participants become more sophisticated and regulatory frameworks become more stringent in terms of what qualifies as a 'sustainable investment', this heightened awareness will help alleviate greenwashing concerns and drive further innovation in the market," says Sarah Thompson,

Sarah Thompson

Moses Choi

Stefano Vitali

managing director, sustainable finance at RBC Capital Markets.

In Europe, the mass reclassification of SFDR Article 8 and 9 funds experienced at the end of 2022 is a reflection of increasingly stringent disclosure requirements, says Vitali.

"Furthermore, it will be interesting to see how the ECB's experimental indicators on sustainability will play out in the market and how they will be incorporated in their policies going forward, especially as the demand from market participants for more data and disclosures is only expected to grow as they strive to better assess risk," he adds.

Transition finance

The third theme for the year ahead centres on transition finance. Transitioning to a net-zero future requires significant investment, much of it in sectors of the economy that are high-emitting and hard-to-abate.

"To achieve net-zero emissions by 2050, our society needs to reduce emissions in areas such as power generation, transportation and agriculture – all of which provide essential products and services to society today and for the foreseeable future," says Thompson. "Our RBC Economics group estimates that CAD$2 trillion ($1.5 trillion) in investments is required in Canada alone."

Thompson sees the emergence of large, dedicated pools of private capital focused on energy transition and green use-of-proceeds instruments to finance the life extension or refurbishment of nuclear power generation facilities in Canada.

"It is important for us to support our clients in these industries on their journey towards a net-zero economy. That's why RBC's approach includes solutions that serve to

RBC Capital Markets Sustainable Finance Group's milestones

In February 2021, RBC announced an increased commitment to mobilise CAD$500 billion in sustainable finance by 2025 – one of the largest commitments of its kind made by a Canadian bank – after achieving the initial commitment of CAD$100 billion in sustainable financing in 2020.

In October 2022, RBC published its Sustainable Finance Framework, which provides transparency to the methodology used to measure and report on progress towards the bank's $500 billion sustainable finance commitment. The team has also grown during this time, with coverage now spanning Toronto, New York, San Francisco, London and Sydney.

In December 2022, the bank published the RBC Sustainable Commercial Paper Framework, which allows RBC to issue commercial paper where the proceeds will be exclusively applied to fund new and/or existing green and social assets.

decarbonise emissions-intensive activities across all sectors," she adds.

"We support ongoing work to further develop standards and guidance on transition finance including the emergence of transition finance taxonomies that reflect regional economic variations, decarbonisation pathways, and resource availability."

RBC is actively contributing to some of these efforts including through participation in bodies such as Canada's Sustainable Finance Action Council (SFAC) and the ICMA Climate Transition Finance Working Group.

In May 2021, the Government of Canada launched the SFAC to support the growth of the sustainable finance market in the country, with a mandate to make recommendations on critical market infrastructure including common standards for green and transition-related investments across all sectors of the economy.

An important goal of this taxonomy is to accelerate the deployment of capital in support of achieving Canada's climate objectives. It is expected that the Government of Canada will publicly release a set of recommendations and commence work in 2023.

Key takeaways from the RBC Capital Markets 2022 Global ESG Credit Investor Survey

145 investors from North America, Europe and the Asia-Pacific region, covering all key currencies and investing in multiple financial products – from investment grade to high yield, from sovereigns, supranationals and agencies (SSAs) to structured products and loans – took part.

ESG integration in investment mandates was found to be driven by a push from the bottom and guidance from the top in all geographies. Reputational risks and regulatory requirements also play a role.

Appetite for ESG labels is still there, with investors showing willingness to pay premia for ESG labels.

Global investors display a material preference for green bonds: 65% of respondents indicated that they actively invest in the label, compared to approximately 50% for labels such as social, sustainability and sustainability-linked.

In the US, Choi says the Inflation Reduction Act (IRA) will direct nearly $400 billion in federal funding to support the US climate transition goals through a mix of tax incentives, grants, and loan guarantees.

Tax credits, which comprise the largest component of the IRA, will catalyse private investment in clean energy, transportation, and manufacturing. As a result of this, Choi expects there to be more corporate green bond issuance as companies deploy capital to support the energy transition.

"Investor demand for green bonds remains robust," Choi says. "Findings from our Global ESG Credit Investor Survey (see box) indicate that 94% of institutional investors actively invest or are willing to invest in green bonds."

Climate-tech investments will also be one to watch, he adds: "While 2021 was a high-water mark for climate-tech investments – with US venture capital investment reaching $56 billion – the market continues to be resilient. We estimate that there is more than $30 billion in investable dry-powder for climate-tech start-ups, and we anticipate continued focus on corporate innovation and scaling of emerging decarbonisation technologies."

When addressing energy transition through the lens of a capital markets investor, credible transition strategies are the priority and bond labels play an ancillary role in this.

The RBC Capital Markets 2022 Global ESG Credit Investor Survey revealed some interesting observations around the current state of transition-labelled debt. While 14% of respondents indicated that they actively invest in transition bonds today, 65% indicated that they are either considering or researching the product.

"We believe that investors' relative unfamiliarity with the transition label combined with limited issuance to date presents an opportunity to increase awareness and potentially the growth of transition-themed debt instruments in the future," says Vitali.

In the US, Choi sees the popularity of sustainability-linked debt instruments, particularly in the bank market, as an effective way to articulate a bespoke transition story.

"Sustainability-linked structures provide issuers with the flexibility to integrate not simply environmental KPIs, but also targets related to social themes such as just transition, access to essential services, and diversity and inclusion," he says.

What's ahead

Looking ahead to 2023, the group will continue to ensure RBC Capital Markets supports clients on their journey towards a net-zero economy.

"By providing sustainable financing solutions, RBC intends to help finance the transition to net-zero, strengthen a diverse and inclusive culture, build stronger communities and enable economic inclusion," says Vitali.

Thompson adds: "We believe there is tremendous potential for financial markets to contribute to addressing some of the biggest social and environmental challenges we face – from improving the accessibility of affordable housing and inclusive financial services to mitigating climate change and protecting biodiversity."

Thompson also anticipates continued, long-term growth in the Voluntary Carbon Markets (VCMs) as companies operationalise their net-zero commitments.

"Corporates across all sectors are increasingly looking to VCMs to help offset residual GHG emissions and achieve net-zero commitments. Efforts to scale VCMs continue, with both demand and supply-side integrity initiatives playing an important role in driving increased trust and transparency among market participants," she says.

"We anticipate that the critical role of high-quality carbon credits, as a source of funding for nature-based solutions to support biodiversity and climate mitigation and adaptation objectives, will become increasingly appreciated by market participants, regulators, and the general public alike.

"Much like climate, we see nature and biodiversity as financially material to all sectors of the economy, and as a result, see immense potential for issuers to integrate these considerations into their corporate sustainability strategies and use the sustainable finance market as a lever for advancement," she adds. ■

For more information about RBC Capital Markets, see: www.rbccm.com/en/insights/esg.page

Demonstrating ESG leadership with MSCI solutions

MSCI has developed a solution set to help corporates to effectively communicate their transition plans to investors and the broader ESG market. Beth Byington, Meghna Mehta and Jakub Malich explain

With over 40 years of experience measuring and modelling the ESG performance of companies, MSCI ESG Research works with thousands of companies to identify their ESG-related opportunities and risks.

This has become more urgent in recent years as companies have been under increasing pressure to improve their performance on sustainability issues and communicate how they are preparing for the low-carbon transition.

One of the solutions developed to help corporates to communicate their transition plans to investors and the broader ESG market is MSCI's Second-Party Opinions (SPOs) offering.

Launched in 2022, for both green bonds and loans, and social bonds and loans, SPOs are one part of a growing suite of sustainable corporate financing solutions at MSCI that are designed to help investors seeking to ascertain whether a financing framework or transaction aligns with globally accepted standards from the International Capital Market Association (ICMA), the Loan Market Association (LMA) and MSCI ESG Research methodology. [1]

"Our SPO offering builds on our long-standing expertise on the market as well as our deep knowledge of the green bond space, given our leadership position as a provider of Green Bond Indexes," says Beth Byington, global head of corporate ESG & climate solutions at MSCI.

These offerings may be utilised for sustainable debt frameworks, issuances, and/or annual reviews.

Based on a commitment to transparency, MSCI has made the full documents for its Green, Social, and Sustainability methodologies available on its website.

MSCI's SPOs are based on relevant ICMA/LMA Principles for bonds and loans, and with MSCI ESG Research methodologies for green, social and sustainability bonds and loans, which aims to "decrease risks of greenwashing and increases investor confidence in the projects funded by the bonds or loans," says Meghna Mehta, vice president of ESG research at MSCI.

MSCI methodologies also go beyond the guiding market principles and have "more stringent and defined use of proceeds criteria," she adds.

"MSCI methodologies have clear inclusion and exclusion criteria, with stringent requirements for technologies with negative externalities like large hydropower, biomass-based power generation, among others.

"This methodology has informed the award-winning Bloomberg MSCI Green Bond Index, and it is subject to regular consultations and updates with the aim to keep abreast with changing market trends and regulations."

Adding to the ESG solution suite

In addition to the SPO offering, MSCI now offers green bond data, total portfolio foot-printing financed emission estimates, climate metrics relevant to fixed income investors – such as Implied Temperature Rise (ITR) and Climate Value at Risk (CVaR) – indices and research coverage.

"Our Bloomberg MSCI Green Bond Index continues to be a flagship service, but we also offer a range of indices, including Paris Aligned and Climate Transition indices, and proprietorial ESG and climate indices," says Byington.

Jakub Malich, ESG research analyst at MSCI, adds MSCI's ESG and climate indexes act as the "ultimate litmus test" of the quality of MSCI's ESG and climate solutions.

"Building on our extensive body of research, where we explore how ESG and climate factors relate to financial performance,

MSCI ESG Research provides SPOs on whether a bond/framework is aligned to:

The MSCI Green Bond and Green Loan Assessment Methodology, which aligns with and builds on the Green Bond Principles, administered by ICMA and the Green Loan Principles, administered by LMA.

The MSCI Social Bond and Social Loan Assessment Methodology, which aligns with and build on the Social Bond Principles, administered by ICMA and the Social Loan Principles, administered by LMA.

The MSCI Sustainability Bond and Sustainability Loan Assessment Methodology, which aligns with and builds on the Sustainability Bond Guidelines, administered by ICMA.

1 MSCI's SPOs are not designed to verify or certify the use of proceeds for a specific transaction.

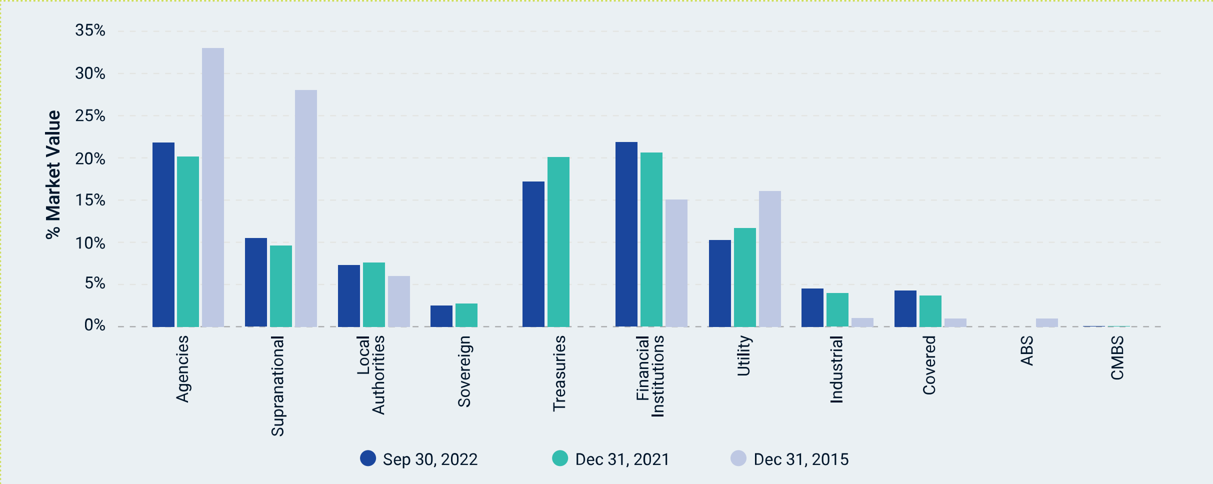


Figure 1: Bloomberg MSCI Global Green Bond Index – Market value by sector

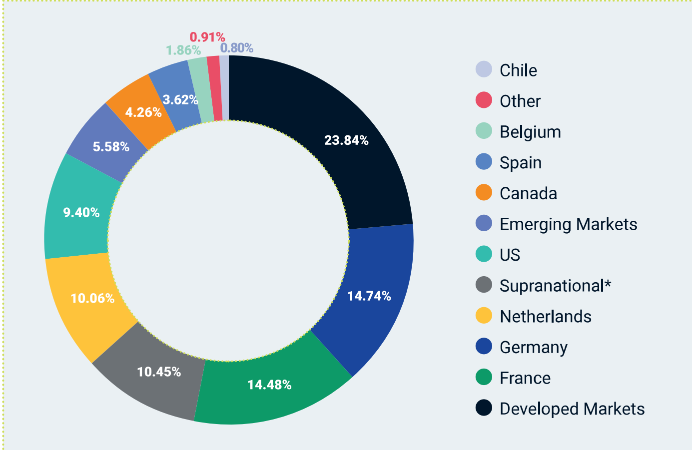


Figure 2: Bloomberg MSCI Global Green Bond Index – Market value by Country *(As of September 30, 2022)*

MSCI's ESG and climate index performance ultimately tests the relevance and quality of our underlying company- and security-level ESG and climate assessment methods," he adds.

The Bloomberg MSCI Green Bond Index and the MSCI SPO solution both use the MSCI Green Bond and Green Loan Assessment Methodology to assess the eligibility of a bond.

This is to maintain consistency, outlines Mehta: "If a bond meets the MSCI Green Bond and Green Loan Assessment Methodology, it will get a positive SPO and is eligible for the Bloomberg MSCI Green Bond Index as well if it meets the fixed income criteria. Any index or product we build on social bonds or loans, or sustainability bonds or loans will also use the same methodology that is used to provide SPOs.

Hence, there is a consistency in the methodology used across index and SPOs to prevent 'greenwashing' and 'social washing'," she says.

A unique vantage point

Being a provider of indices also gives MSCI a unique insight into wider green bond market sector trends.

For example, analysing the types of companies listed within the Bloomberg MSCI Green Bond Index over the year, MSCI has observed increasing sectoral diversity among issuers as the green bond market has grown; going from being dominated by supranational, financial institutions and utilities in 2015/2016, to a steady increase in sovereign, treasury, industrial and real estate issuers (see Figure 1).

There is increasing geographic diversity as well. Issuers from 15 countries comprised the Index in 2015, which has increased to over 40 countries (as of 30 September, 2022), as sovereigns are increasingly using green use-of-proceeds bonds to meet their climate targets, infrastructure needs, biodiversity conservation, and to provide subsidies to their citizens for green projects (see Figure 2).

Issuers from hard-to-abate sectors, such as steel, aluminium, fertilizers and industrial firms, are also entering the green labelled market as they seek to fund projects that reduce chemical use, waste production, fossil fuel dependence and greenhouse gas emissions.

The data also tells a story about which sectors might be lagging or issuing more than "expected", says Malich (see Figure 3).

"While virtually all sectors now issue labelled bonds, there are sectors that issue more than expected (versus their presence in the wider corporate bond market) and those that issue less. For example, utilities and real estate seem to be more active in the labelled bond market, while healthcare and information technology companies lag their overall issuance. Though this could be partly explained by different decarbonisation needs among sectors, the energy sector also issues less labelled bonds compared with its broad market issuance – a huge discrepancy with utilities – as both are among the most carbon-intensive sectors," he says.

Resilience of labelled bonds and investor demand

While bond issuance fell in 2022, as interest rate rises were seen across markets, labelled bond issuance held up well compared to the wider market, showing the resiliency of this sub-asset class, argues Byington.

"In 2023 we expect further widening and deepening of labelled bond issuance. We expect the market successfully to negotiate rising regulatory requirements and the provision of new issue and security level information – ESG and climate information being provided at the bond or loan level, as well as at the issuer company level.

"In the second half of 2023, a rise in 'real world' green CapEx such as new investments in renewable energy, energy efficiency, green buildings, battery storage, plus possibly 'green steel' and 'green cement', spurred on by the US Inflation Reduction Act and Europe's response to this may translate into rising labelled bond issuance," she says.

ESG investors too are increasingly looking for ESG investment solutions across all their investments as the climate transition is expected to drive investment flows over the next decade.

"More and more asset managers and retail investors are looking for ways to hold fixed income securities that either benefit from ESG screens and analysis or that have an impact aspect, such as one finds in the Bloomberg MSCI Green Bond Index or some of the Paris-aligned benchmark indices," says Byington.

"Many investors are now looking not just at the quality of the green bond's use of proceeds but also at the quality of the issuing entity. MSCI's ESG scores on issuers are relevant here, as are MSCI's climate related metrics - ITR and CVaR.

"Investors are also looking for reassurance that green bonds they invest in are SFDR compliant. This is something that is analysed in order for a green bond to enter the Bloomberg MSCI Green Bond Index," she adds.

ESG leadership

MSCI provides ESG and climate inputs into a range of indices that highlight corporate ESG leadership and can help inform investors' ESG investment decisions and strategies.

With the Bloomberg MSCI Green Bond Index, MSCI ESG Research assesses each bond, not only at the point of issuance but also on an annual basis, up until maturity or full allocation – whichever is earlier.

The annual green bond reporting for each bond on the Index is scrutinised and bonds that are found to have breached the eligibility criteria (for example, by investing in ineligible projects like coal-based power generation) are taken off the Index.

"This annual review of green bonds use-of-proceeds has helped build investor confidence in the bonds on the Index. It

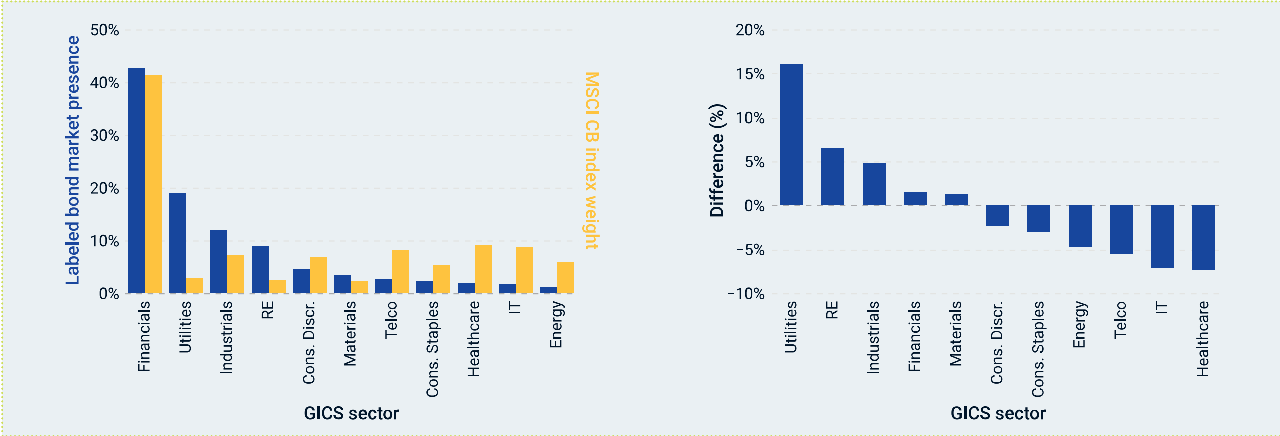


Figure 3: Labelled bond market breakdown by corporate sector

Source: Refinitiv, MSCI ESG Research, data as of 30 September, 2022. Labelled bond market share refers to the total issued volume outstanding and is compared to the respective Global Industry Classification Standard (GICS®) Sector's weight in the composite of MSCI USD, EUR, GBP, and CAD Investment Grade and High Yield Corporate Bond (CB) Indexes. Con. Discr. = Consumer Discretionary, Con. Staples = Consumer Staples, IT = Information Technology, RE = Real Estate, and Telco = Communication Services GICS sector.

has also driven issuers to be more transparent about planned use-of-proceeds allocation at issuance to prevent confusion in later years," says Mehta.

In addition, corporate net-zero commitments will be an important driver of ESG leadership momentum.

"It is important both that green bond investors are open to supporting new methodologies but, equally, that the market is able successfully to analyse and understand the use of proceeds for such issuances," says Byington.

Increasingly, green bond market participants seem to be looking for metrics to show the impact of their investments. At the security level, MSCI's Total Portfolio Footprinting (TPF) solution offers a way to estimate 'financed emissions' at the security level. The TPF method allows investors to compare financed emission estimates between green bonds and between green and non-green bonds.

"MSCI has created a number of Paris Aligned Benchmarks and Climate Transition Benchmarks, in order to allow asset managers and asset owners to follow this route," says Byington.

Malich adds: "If the market continues to grow in diversity, as it has in the last few years, we might be nearing a point where investors can build bond portfolios exclusively from labelled bonds or other instruments with desired sustainability-related characteristics (e.g., low financed emissions), without having to make compromises in allocations among sectors, maturities, credit quality, yield requirements, etc. This wasn't the case just a few years ago, when most of the issuance came from quasi-sovereign agencies and there were no solutions to quantify the sustainability impact of investments, such as the TPF tool."

Looking to 2023 and beyond, Byington says MSCI also intends to launch an SPO solution for sustainability bonds and loans in the first quarter of 2023 and, over time, "we expect to launch SPO offerings for other types of sustainable debt as well." ■

For more information, see: https://www.msci.com/our-clients/corporates/second-party-opinions
https://www.msci.com/our-solutions/esg-investing
https://www.msci.com/our-clients/corporates

Transition bonds: Could 2023 be the year we see them take off?

Transition bonds have not emerged as a widespread sustainable bond label. However, a recent proliferation of transition bond issuance in Japan could signify the emergence of several hubs for the instrument which could be much more regional in nature. Jarek Olszowka explains

The transition bond label has struggled to secure widespread adoption since it emerged in 2017 – partly due to issues around defining transition finance and the rapid growth of sustainability-linked bonds (SLBs), which appeared to be preferred by both 'transition' issuers and investors over a distinct use-of-proceeds (UoPs) transition bond label.

While green bonds require climate and other environmentally beneficial projects to be identified for financing or refinancing, transition bonds focus on UoP categories that help a company progress towards its decarbonisation goals. In other words, helping companies transition from brown to "less brown" or "greener".

While there have been a few attempts to get the label off the ground since Hong Kong's energy firm Castle Peak came to market with the first transition bond, issuance has been limited. Even well-respected issuers who have entered the market have faced challenges.

However, a potential sea change came in 2022 when the Japanese domestic market turned its gaze towards transition bonds. This came in the aftermath of the Japanese government announcing its own climate transition finance guidelines (see case study opposite).

While this was an encouraging development, these issuances have been placed with domestic investors and a widespread acceptance and availability of a uniform label in international markets remains out of reach – for now.

Jarek Olszowka

The reasons for this are manifold, says Jarek Olszowka, head of sustainable finance IBD at Nomura.. Firstly, there is no universally accepted definition of what transition finance is and what is an acceptable minimum degree of transition required from individual sectors or particular issuers.

"There is a multitude of definitions of transition out there, but none has been internationally agreed upon. This, in turn, has led to a lot of confusion among international investors as to what is meant by a transition bond. The lack of agreement on the definition is preventing market growth," says Olszowka.

Related to this is a fear of being accused of 'transition-washing'. In the green bond market, by comparison, investor confidence has grown alongside the emergence of credible market guidance, product level principles and green taxonomies. All of which have clarified and delineated what qualifies for green financing.

While Canada and reportedly Australia are working on their own transition finance definitions, virtually none of the major global economies have transition taxonomies or guidelines in place.

The EU Platform on Sustainable Finance has proposed the

Japan's transition finance leadership

In May 2021, Japan's Financial Services Agency, Ministry of Economy, Trade and Industry (METI), and Ministry of the Environment, published the Basic Guidelines on Climate Transition Finance. The aim of these was to promote transition finance in Japan, particularly in sectors where emissions are difficult to reduce.

These guidelines, while highlighting alignment with the International Capital Market Association (ICMA) Climate Transition Finance Handbook, also clearly spelled out that transition finance could include UoP-based transition bonds, alongside green bonds and SLBs.

Crucially, and in stark opposition to other parts of the globe, Japan also set out a series of net-zero roadmaps covering the high-emitting sectors of cement, chemicals, electricity, gas, steel, oil, and paper/pulp. These technology roadmaps provide much needed sector-level transition finance guidance on how issuers can prioritise projects to help Japan achieve its 2030 and 2050 decarbonisation targets (46% GHG reduction versus 2013 levels and carbon neutrality, respectively).

The aim was to establish how an orderly transition could support the Japanese economy and play to its competitive strengths, while promoting promising technologies based on scientific grounds, says Olszowka.

"The authorities almost treated these net-zero technology roadmaps as an industrial policy, rather than a purely sustainable finance one. This could be very useful – if it is still science-based and delivered in a form which would allow finance to benchmark against," he says.

"There is an active push in Japan – equally absent in many other countries – to promote certain climate mitigation technologies that capitalise on the vast industrial expertise of Japan's real economy. The government took into consideration the market leadership in some of these areas. For example, transition pathways for ammonia combustion, coal-to-gas or hydrogen – all in hard-to-abate sectors."

Prior to the publication of the guidelines, there had been no transition bonds from Japan. Since the guidelines and subsequent roadmaps have been released, nearly 30 transition bonds have been issued from a range of sectors: shipping, power generation, heavy industry, aviation, chemicals and steel – with many others on the horizon.

It's a model that Olszowka expects other countries could follow – especially those which are highly dependent on natural resources or where a high proportion of GDP comes from hard-to-abate sectors.

"From a power supply perspective, Japan exhibits the highest fossil fuel dependency out of all developed economies: in the aftermath of the Fukushima nuclear disaster, coal and gas account for approximately 70% of all electricity generation, with that figure nearing 80% when you include oil. For Japan to have a shot at achieving its decarbonisation goals it needs to rely on transition finance," he says.

"Just looking at the country's mountainous geography – you can't easily roll out solar or wind at scale, either. There are simply not enough green projects to finance," he adds.

Japanese PM Kishida-san announced in May 2022 that Japan will look to issue up to JPY 20 trillion (approximately $152 billion) of sovereign transition bonds over the coming decade, making it the first sovereign to choose such an instrument rather than green, social or sustainability bonds or SLBs.

Case study: JFE Holdings Transition Bond

Transaction Details

JPY 30bn Transition Bond		
Issuer	JFE Holdings	
Tenor	5yr	10yr
Notional	JPY25bn	JPY5bn
Alias	JFE Group Transition Bond	
Rating	A / AA- (R&I / JCR)	
SPO Provider	Japan Credit Rating Agency (JCR)	
Coupon	0.330%	0.579%
Amended Shelf Registration	20 January 2022 / 16 May 2022	
Pricing	3 June 2022	
Bookrunner	**Nomura** / MUMS / Mizuho	Mizuho / **Nomura** / Daiwa
Structuring Agent	**Nomura**	

Transaction Objectives

- JFE Holdings (JFE), one of Japan's two largest iron and steel groups, which aims to contribute to society with the world's most innovative technology, has positioned the problem of climate change as a matter of extreme importance. As part of its response, JFE it has issued the JFE transition bond, the first in the iron and steel sector, and showcased by METI as a model case consistent with its transition finance technology roadmap for that sector.
- Group Environmental Vision for 2050, which is aimed at contributing toward the realisation of a carbon-neutral world, assessed as aligned with METI's technology roadmap for transition finance in the iron and steel sector.
- Based on the expectation that steel will remain a vital material in the carbon neutral world of the future, JFE Steel intends to develop decarbonisation technology as early as possible, ahead of other global competitors, while also enhancing existing processes with various transitional technologies, as indicated in the company's Roadmap to Carbon Neutrality by 2050.
- Proceeds from this transition bond issuance will be allocated to projects from the following UoP categories per JFE's transition bond framework: Energy conservation and improved efficiency, Manufacturing eco-friendly products, Development of ultra-innovative steelmaking processes and Renewable energy.

NOMURA

creation of an intermediate or 'amber' performance category as part of the EU's taxonomy, but this conceptual proposal is yet to progress, with the EU only so far opting to temporarily label gas as green in certain circumstances and keeping it firmly within the existing 'non-extended' EU taxonomy and not in a separate transitional activities bucket.

The planned introduction of an amber category was expected to cover intermediate activities which are not yet green but also not 'significantly harmful' to the environment under the Do No Significant Harm principle.

"If ever, it will certainly be many years before an extension of the EU taxonomy to cover non-green activities takes any concrete form", says Olszowka. "Plenty of questions arise as to if it will ever be legislated – partly due to concerns around its complexities and reaching political consensus around the various thresholds and level of ambition across all the EU Member States.

"Usability of such an extension is a concern. Especially if you juxtapose any such brown (or rather 'amber' and 'red' in the proposal's parlance) extension versus the existing EU taxonomy – which is much more straightforward but still raises many concerns in terms of its practical usability," highlights Olszowka.

There are also fears from certain stakeholders that such an extension could divert funding away from sustainable activities and not achieve the desired effect in terms of the required real-world improvements.

Some private market initiatives, such as the Climate Bonds Initiative or the Science Based Targets initiative (SBTi) have published guidance or transition pathways. However, these are "far from being universally agreed and not really equivalent to having hard legislation or even some form of regulatory guidance in place," says Olszowka.

The absence of universally accepted taxonomies could create a fragmented market, he cautions.

"We might end up with several transition bond hubs which would be more regional in nature. As a consequence, the international capital markets are unlikely to see the issuance volumes of other established sustainable bond categories until we get a universal definition for transition bonds."

Another pressure on the transition bonds label came from the emergence of SLBs, with the former effectively being subsumed and superseded by the latter.

"When we started work on the ICMA [International Capital Market Association] Climate Transition Finance Working Group back in early 2020, the idea was to develop a transition label. Consensus quickly emerged across the majority of investors and international issuers that SLBs were the transition instrument of choice. The group decided to focus on climate transition disclosures to be added to SLBs and existing UoP bonds, rather than creating a separate label, especially in the absence of a global consensus around key definitions and components of such an instrument."

While there is a fair amount of cross-over between the two products, they seek to deal with transition in different ways.

"Transition is typically not based on qualifying assets but, by definition, tied to the overall improvement of the sustainability performance of an issuer over time. It is this fundamental structural difference that has meant SLBs have been seen as more suitable to support transition," says Olszowka.

A recent shift in sentiment against SLBs due to structural concerns and fears they are not ambitious enough to prevent accusations of greenwashing could give transition bonds a second wind.

"With increased focus on litigation risk and greenwashing, some investors may feel they are better off investing in specific transitional technologies and CapEx in hard-to-abate sectors via UoP bonds," says Olszowka.

"Perhaps one day we will even see transition bonds which also contain KPIs and SPTs [Sustainability Performance Targets] and the associated margin variation features – thereby marrying the two types of transition-focused instruments. Although I do expect that to be the fringe, I could see it having merit for certain investors and issuers."

Could 2023 be the year?

Transition finance is an area where investors tread carefully. However, Olszowka believes that once investors become more comfortable with the transition label, its distinct categorisation could prove to be its strength.

"Having a separate label could be cleaner for some," he says. "Contrary to popular belief, it can help prevent accusations of greenwashing because it makes investors aware that it is a transition instrument, and they are not buying something marketed as green or that will become green.

"Another advantage is investors are familiar with the UoP model that is well established in green and social bonds. Plus, impact reporting provides transparency that you do not necessarily get with SLBs."

Olszowka believes investors are better placed to understand the instrument than a few years ago.

"The more sophisticated ESG-driven investor continues to invest and build out their ESG capabilities to better understand transition finance. It is a complex and context specific area. You must make informed decisions on whether something is aligned with transitional pathways, and make judgments on whether by supporting a given transitional technology you are locking it in for decades when cleaner alternatives may emerge in the interim. Many ESG investors have enhanced in-house capabilities to deal with in the past 18-24 months."

The final piece of the puzzle would be dedicated transition bond funds or ESG investment mandates focused on transition.

"We are seeing more asset managers coming out in vocal support of transition finance, highlighting the importance of stewardship over divestment and emphasising the need to divert more capital to genuinely transitioning issuers. But we are yet to see the emergence of dedicated strategies or pools of assets focusing purely on this," he says.

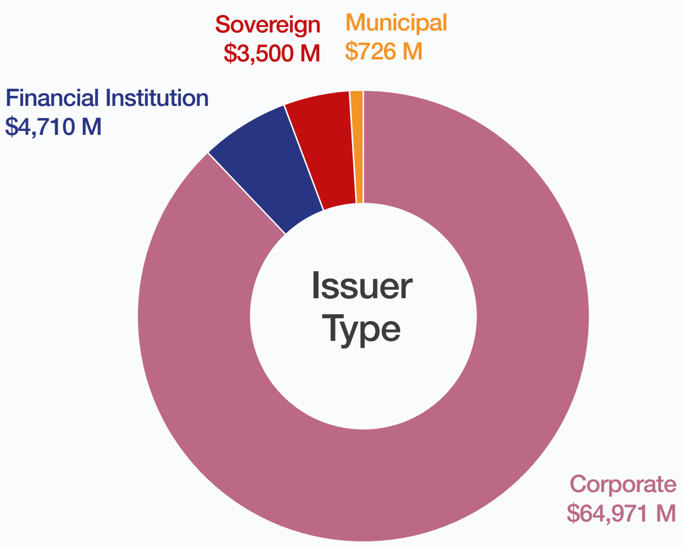
"If we are to get anywhere near the Paris Agreement target, we need to look at the less green stuff as well and see how we can make meaningful decarbonisation gains.

"Will transition bonds take over from SLBs? I don't think so. Equally, their demise which was widely touted around 2019-2020, seems to have been premature. Parts of the global economy may well go down the route of transition bonds. The debate and structuring dilemmas are far from over." ■

For more information, see: www.nomuraholdings.com/sustainability/sustainable/finance.html

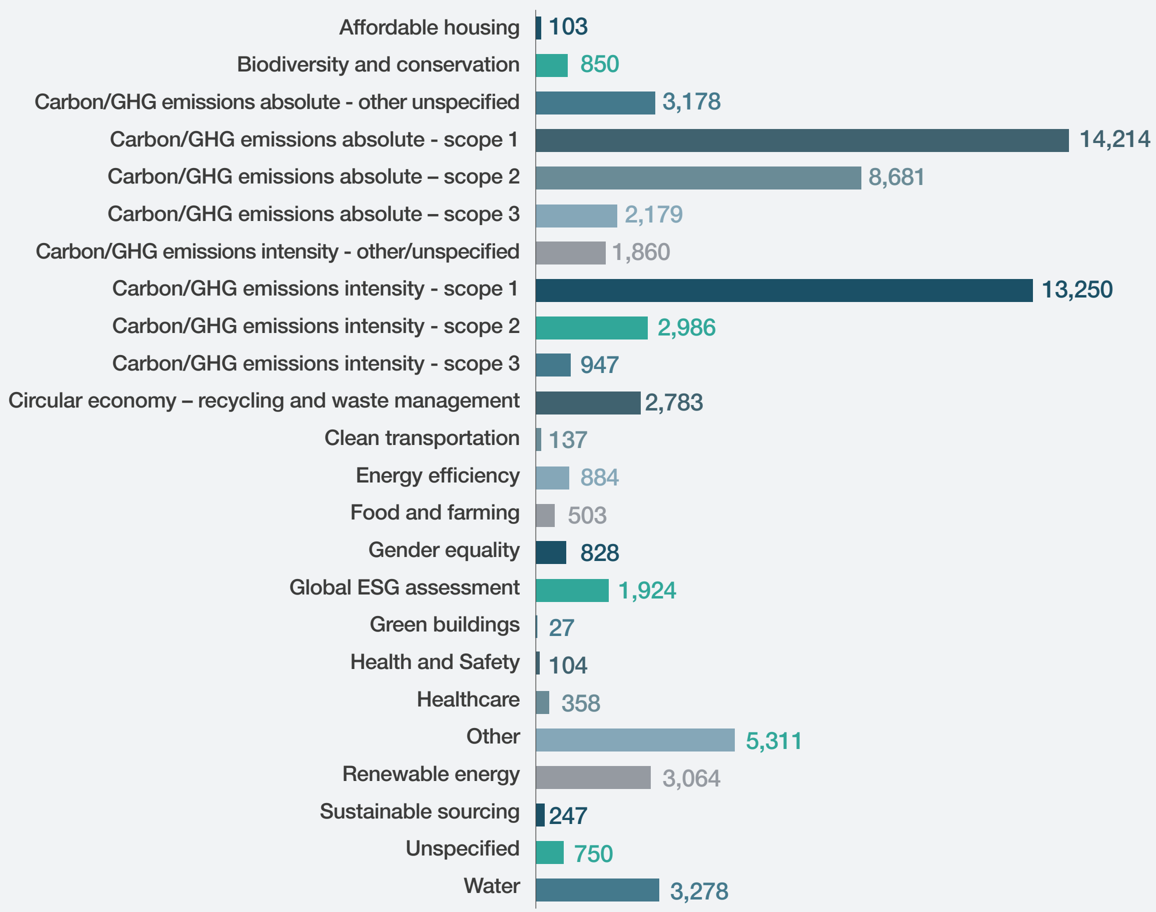
Sustainability-linked bond (SLBs) issuance continues to be dominated by corporate issuers, however 2022 saw the first SLB being issued by a sovereign with Chile's $2 billion SLB in March, followed by Uruguay's inaugural SLB in October 2022. Looking at KPI categories targeted by SLBs, Scope 1 CO_2 emissions are the most funded KPIs, both absolute and intensity of emissions. In fact, carbon and greenhouse gas emissions dominate KPIs.

Issuer type breakdown of sustainability-linked bonds in 2022



Methodology: the value of bonds with multiple KPIs was pro rated equally to each KPI.

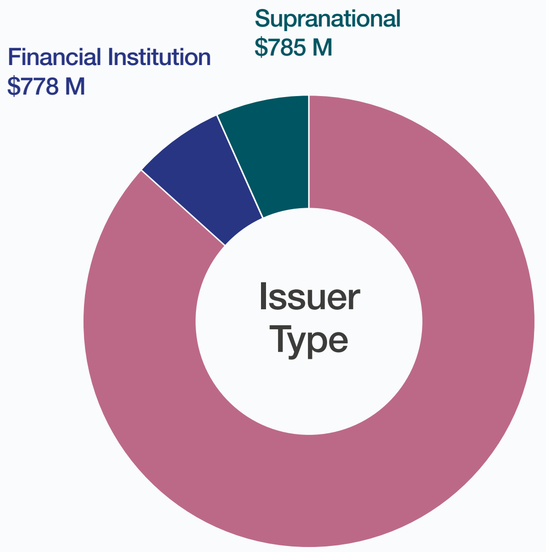
Breakdown of sustainability-linked bond KPIs by value in 2022



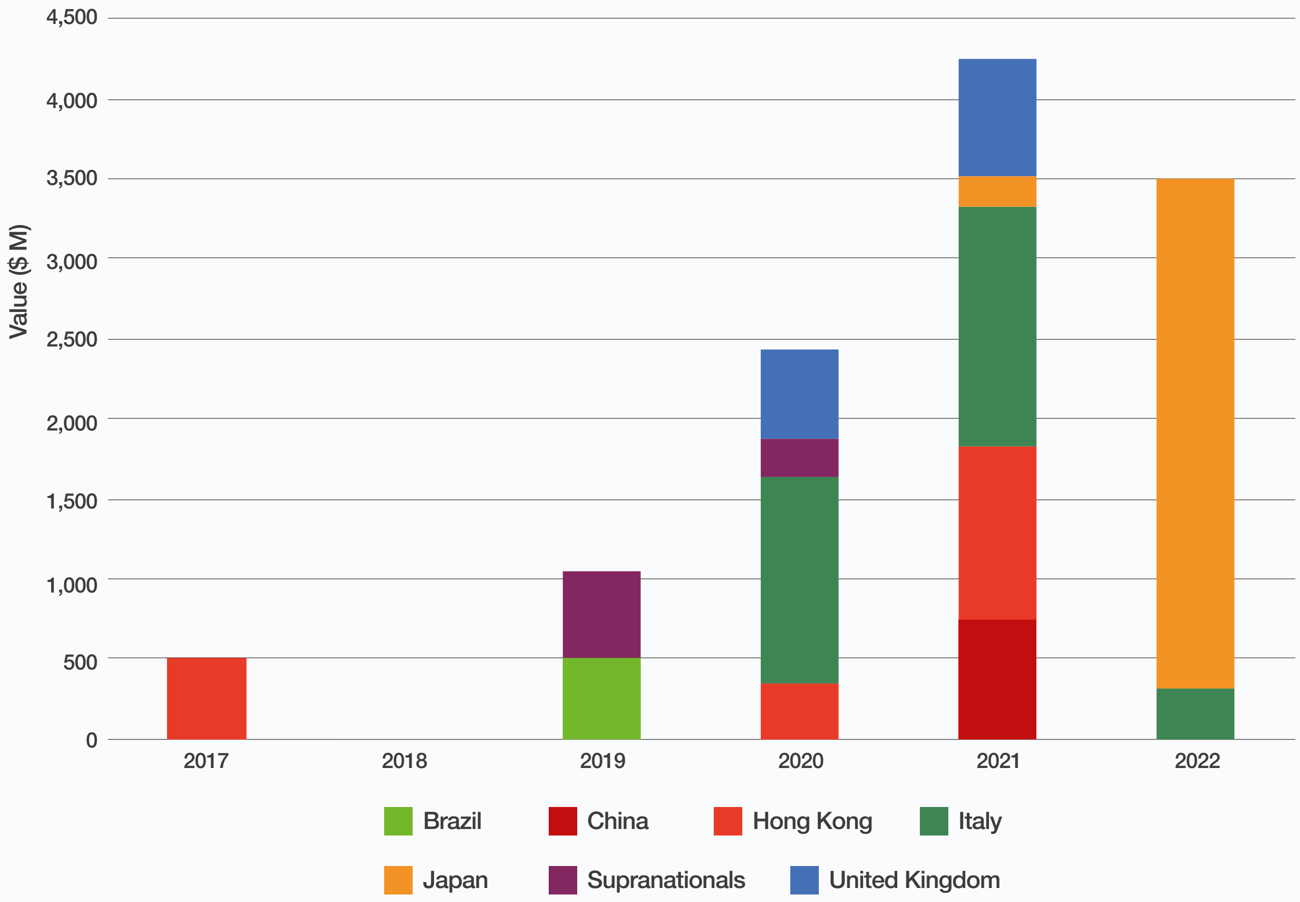
Transition bonds

Transition bond issuance remains low, however, there has been a huge shift in geographical issuance, with Japan accounting for over 90% of transition issuance in terms of value. This shift is largely due to Japan's introduction of transition finance guidelines. The composition in terms of issuer type broadly mirrors SLBs in that corporates dominate the label.

Issuer type breakdown of transition bonds 2017-2022

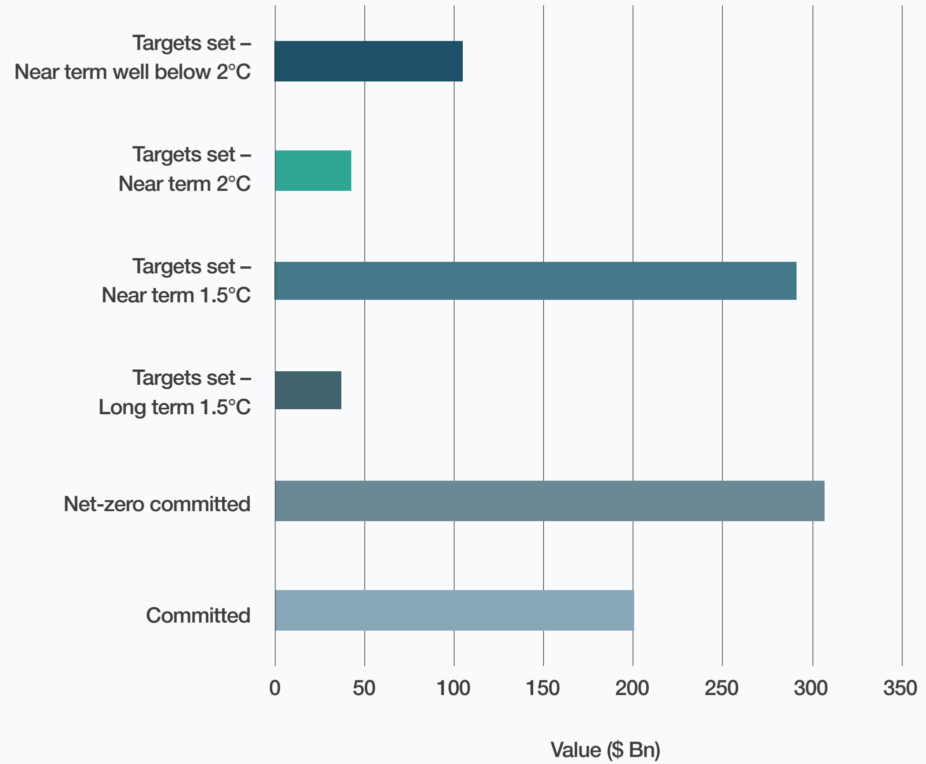


Annual issuance of transition bonds by country

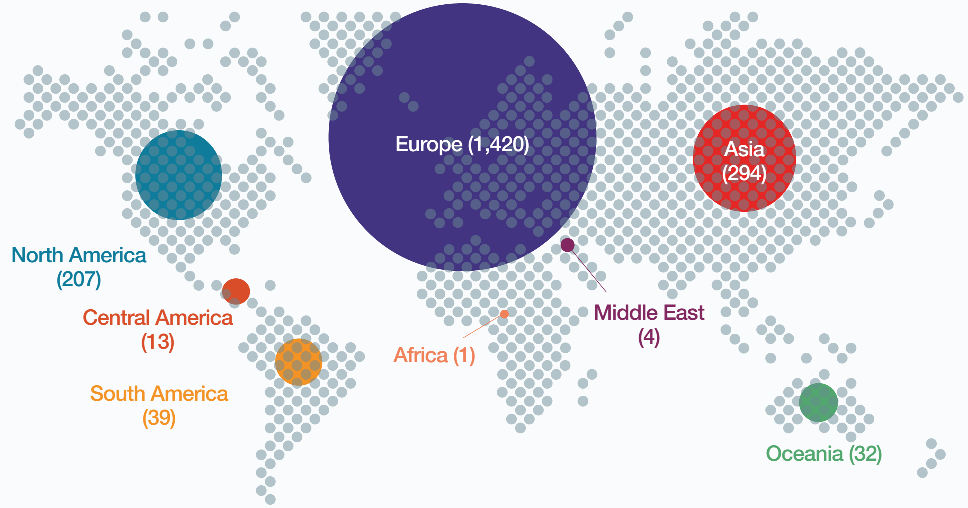


Just under 14% of sustainable bond issuers have worked with the Science Based Targets Initiative (SBTi) to validate their sustainability targets. The most commonly set targets are “Near term -1.5°C”. In terms of regional issuance, SBTi-aligned issuers have been concentrated in Europe, with over 1,400 bonds issued. This is significantly higher than the second largest region, Asia – which saw 294 bonds issued.

Value of issuances from issuers commited to SBTi



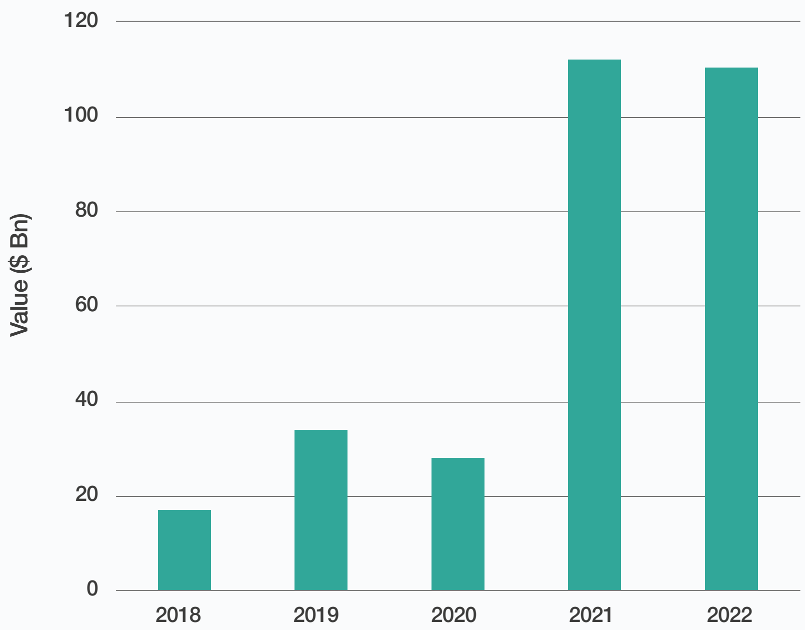
Regional breakdown of issuance from SBTi-aligned issuers by number of deals



Note: some issuers have more than one SBTi aligned target and have targets in addition to Net-Zero commitment.

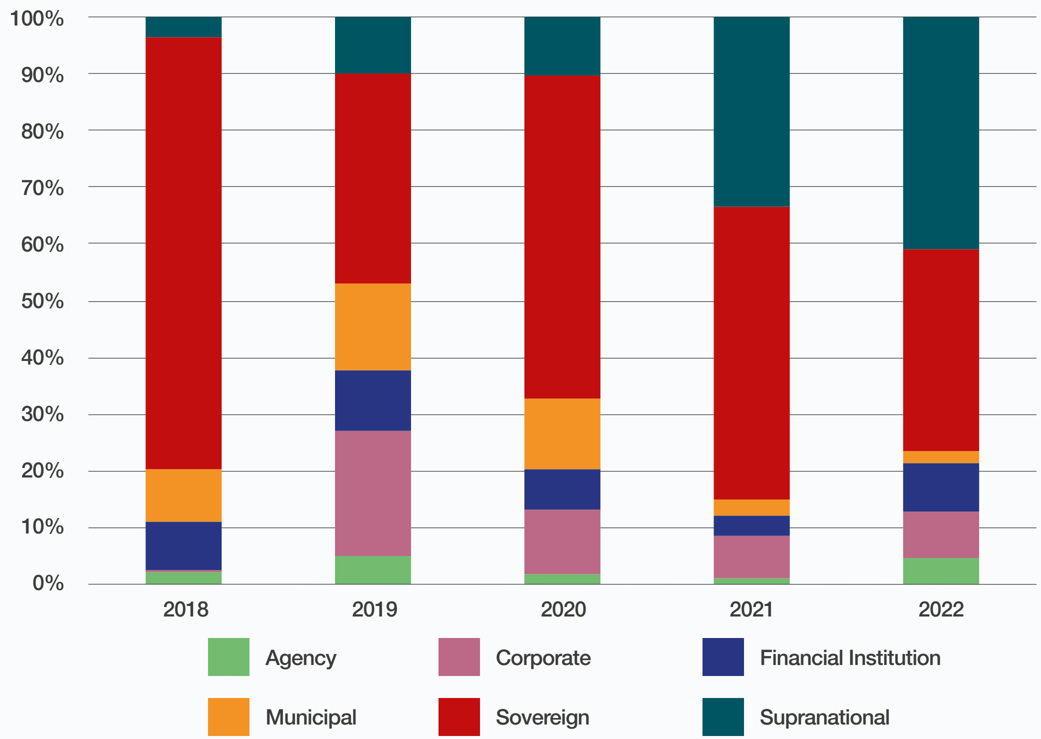
Bonds that include biodiversity use of proceeds (UoP) or KPIs increased significantly in 2021, and sustained the same levels in 2022, despite an overall decrease in the issuance of sustainable bonds. In terms of issuer type, supranationals have been steadily increasing in market share of bonds with biodiversity UoPs or KPIs at the expense of sovereigns. However, 2022 saw a general increase in the diversity of issuer type in this space compared with 2021 which was heavily concentrated in supranational and sovereign issuers.

Annual issuance of bond with biodiversity UoP or KPI

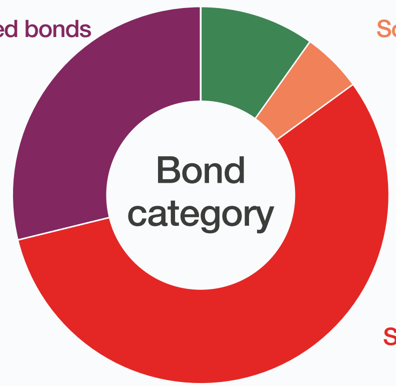


Methodology: Biodiversity bonds in this instance being defined as any sustainable bond that has targeted terrestrial and aquatic biodiversity as one of its use of proceeds or KPIs

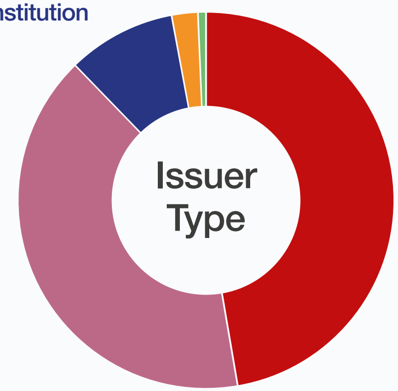
Share of bonds with biodiversity UoP or KPI by issuer type



Breakdown of Latin America bond labels in 2022



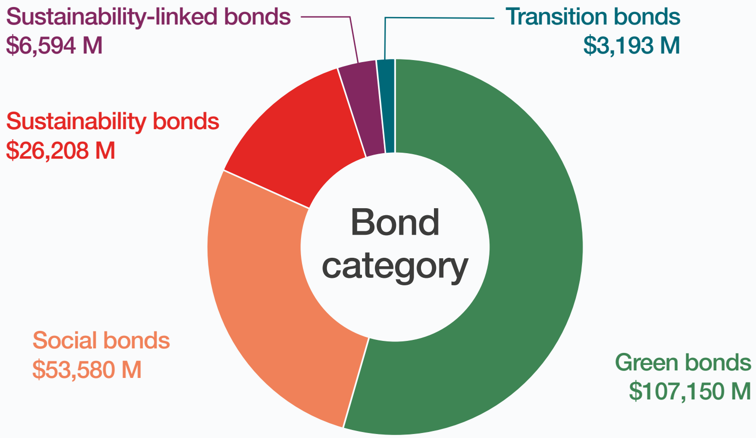
Breakdown of Latin America sustainable bond issuer types in 2022



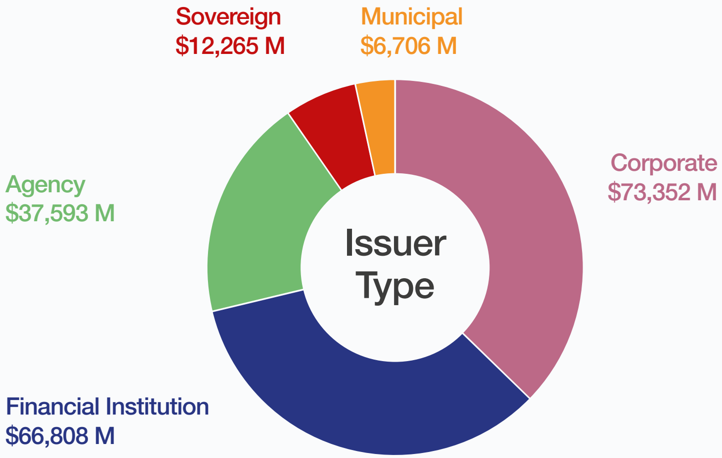
Top 10 lead managers of Latin American issuance

Lead manager	Value ($M)
Santander	3,562
Scotiabank	3,075
BBVA	2,950
J.P.Morgan	2,530
citi	2,151
HSBC	2,096
CRÉDIT AGRICOLE CORPORATE & INVESTMENT BANK	1,225
BNP PARIBAS	944
SOCIETE GENERALE Corporate & Investment Banking	667
Itaú BBA	663

Breakdown of Asian bond labels in 2022



Issuer type breakdown of Asian sustainable bonds in 2022



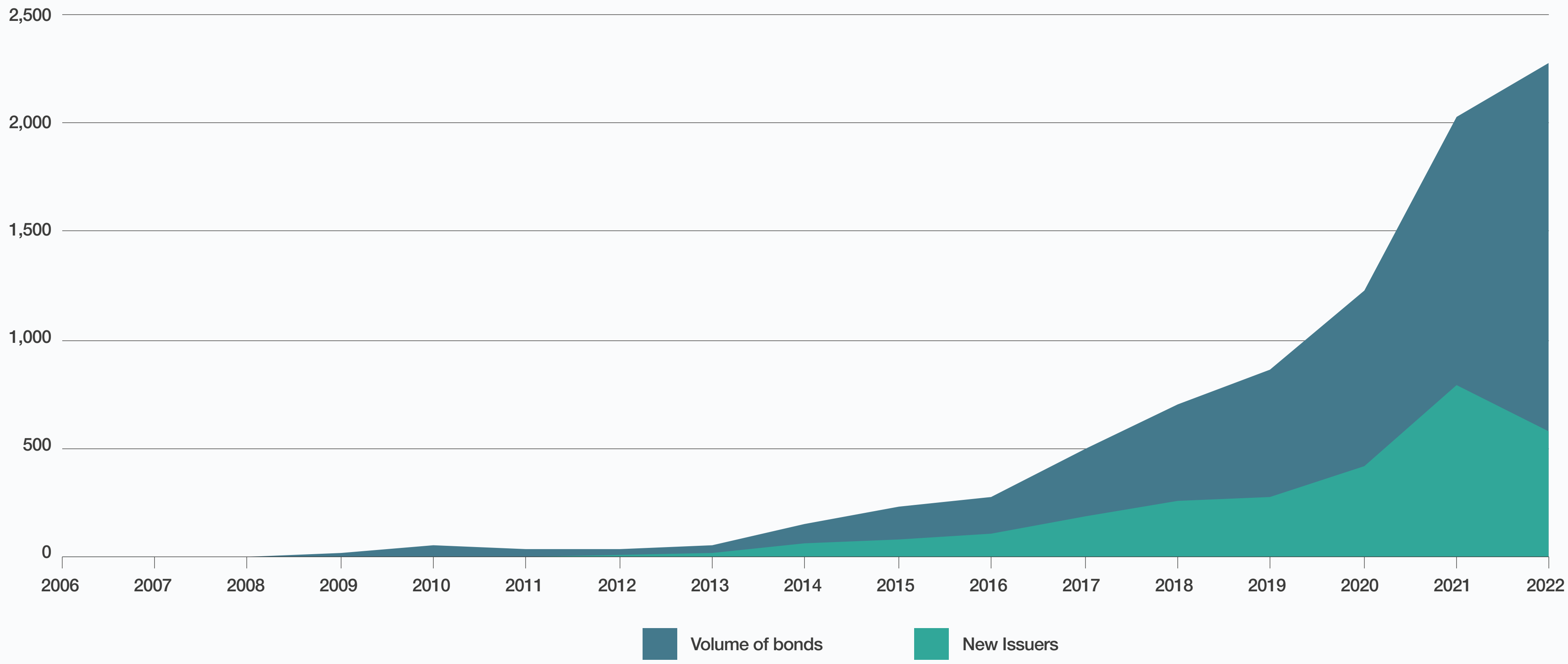
Top 10 lead managers of Asian issuance

Lead manager	Value ($M)
MIZUHO	10,327
NOMURA	9,199
Daiwa Securities Group Inc.	8,212
Mitsubishi UFJ Morgan Stanley	6,047
HSBC	5,458
citi	4,930
中国银行 BANK OF CHINA	4,893
CICC 中金公司	4,645
BANK OF AMERICA	4,544
BNP PARIBAS	4,040

Singular vs repeat issuers

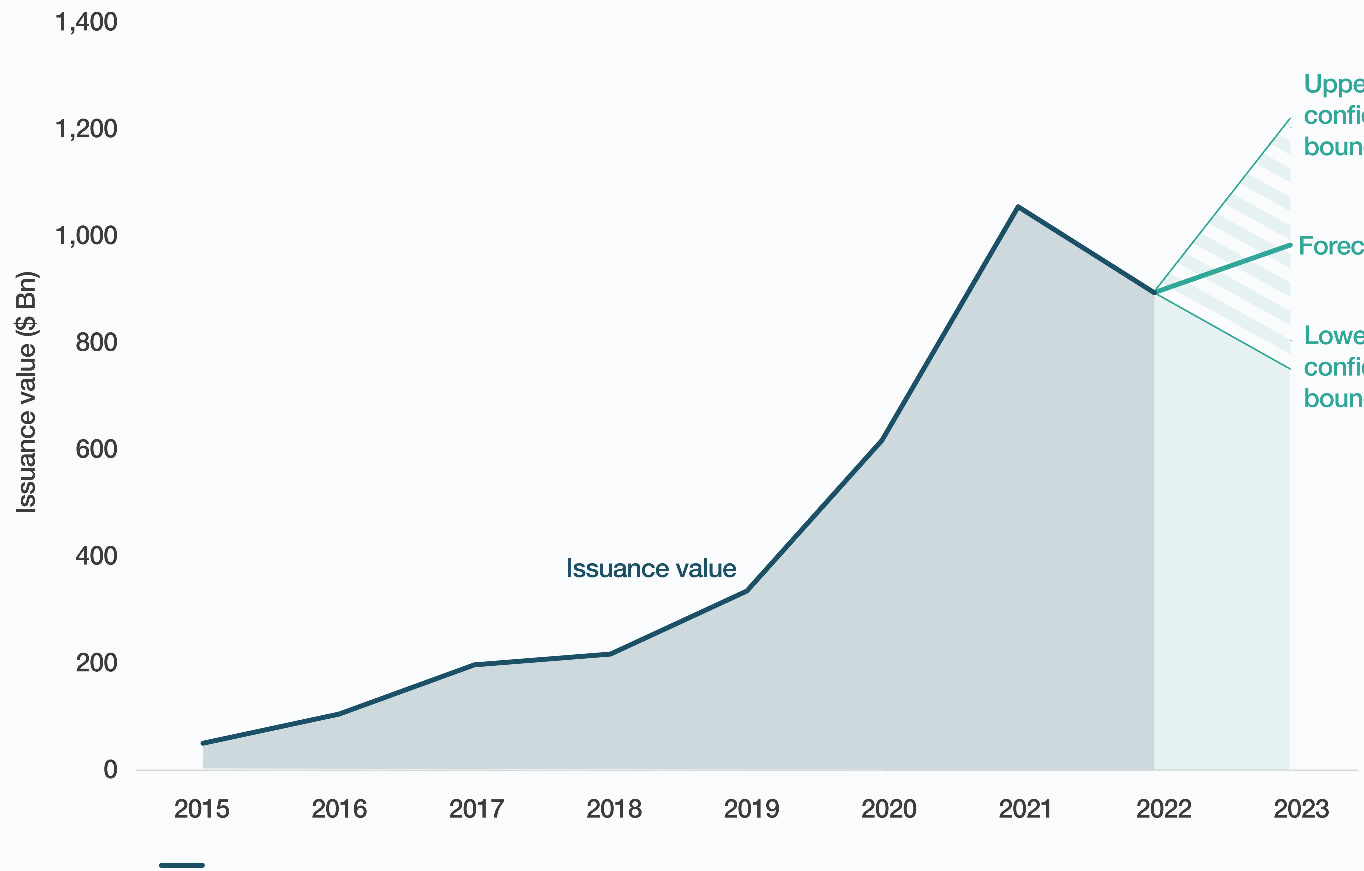
The number of new issuers to the sustainable bond market has risen each year along with number of bonds issued. This trend was interrupted in 2022 when a decrease in new issuers and an increase in bonds saw the two metrics decouple. The number of bonds issued each year increased faster than the rate of new issuers. In 2022, the decrease in new issuers showed that the market was buoyed by bonds from repeat issuers.

New issuers vs volume of bonds* issued annually

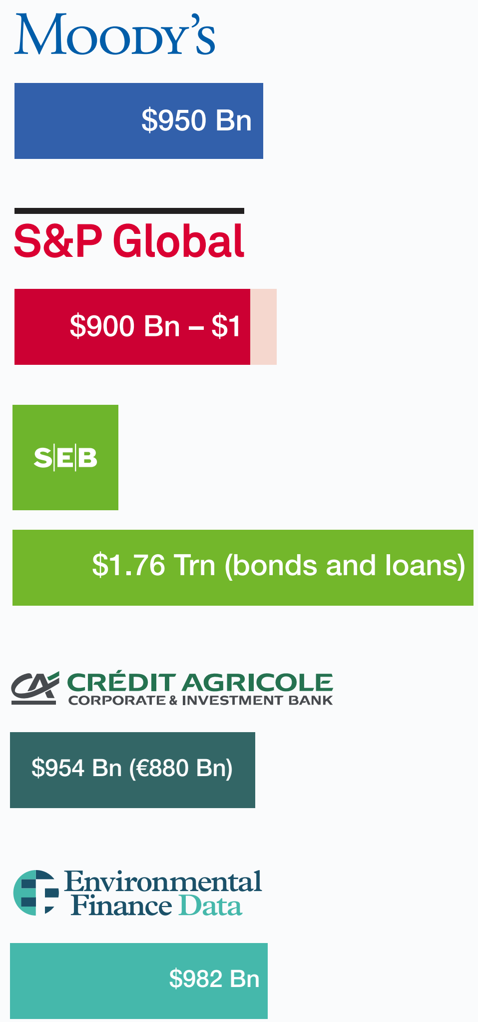


*Excluding Fannie Mae isssuances

Market predictions



Predictions for the sustainable bond market in 2023



Note: Lower and upper confidence bounds are accounting for the headwinds and tailwinds of the market, for complete methodology of *Environmental Finance*'s market prediction please visit **Efdata.org**