Sustainable Debt Market
Summary Q1 2022

Climate Bonds Initiative

May 2022

Key figures

- Milestone: **cumulative green, social, sustainability, sustainability-linked, and transition (GSS+) labelled debt reached USD3tn** at the end Q1 2022; cumulative green at **USD1.7tn**
- Sustainability-linked bonds reached cumulative **USD155.5bn** by Q1 2022; transition bonds at **USD10.2bn**
- Q1 2022 issuance of GSS+ labelled deals reached **USD202.2bn**

Sustainable fixed income market

Theme		Label	Format
GSS+	GSS	Green	Use of proceeds
		Social	Use of proceeds
		Sustainability	Use of proceeds
	Transition	Sustainability-linked	Entity KPI-linked
		Transition	Use of proceeds

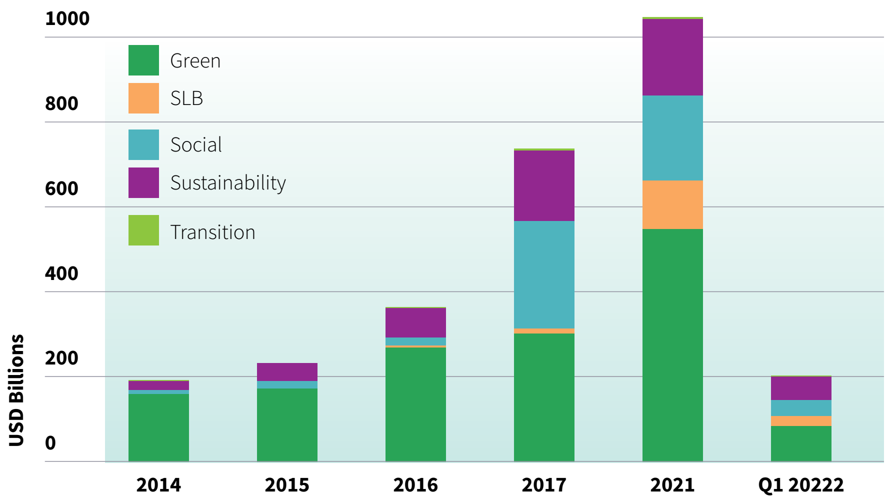
- **January** was the most prolific month of the quarter with **USD102.9bn** of GSS+ issuance

The first quarter at a glance

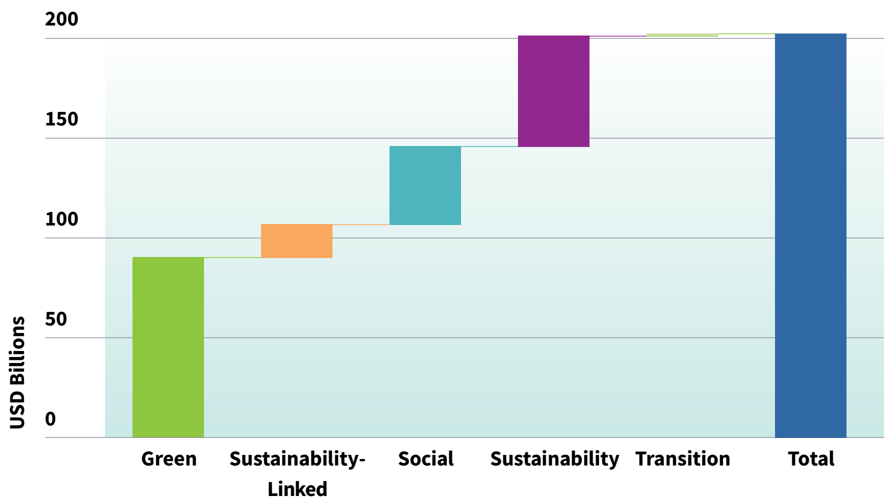
Total volumes for the GSS+ market – including labelled green, social and sustainability (GSS) use of proceeds (UoP) bonds, sustainability-linked bonds (SLB) and transition bonds – reached the USD3tn milestone in Q1 2022. Market dynamics have, nonetheless, not been particularly favourable in the first quarter: the sell-off in the bond markets, rising interest rates, the war in Ukraine, and resulting market volatility have led to a slowdown in bond issuance, with the impacts visible in GSS+ volumes.

Overall, Q1 2022 witnessed a year-on-year (YoY) decline in volumes of almost 30% compared to Q1 2021 (USD202bn vs. USD284bn). Transition, social and green bonds slowed the most, with transition bond volumes representing less than a quarter of the total compared to Q1 2021. Social bond issuance halved, while green bond volume decreased by almost 38%. Sustainability Use of Proceeds (UoP) and sustainability-linked were the only themes where bond issuance accelerated in Q1 compared to last year, with an increase of 27% and >100%, respectively.

Cumulative GSS+ volumes reached USD3tn in Q1 2022



Green-themed issuance was the largest in Q1



Market commentary: Accelerating the energy transition today is pivotal for a net-zero future

The events in the first quarter of 2022 highlighted the urgency to accelerate the transition to a global low-carbon economy. The latest IPCC report and the Russian invasion of Ukraine point towards the need to shift away from a fossil fuel-based economy, improve energy security, and maintain the feasibility of reaching the climate objectives outlined in the Paris Agreement.

IPCC reports reinforce the urgency of climate action

On 4 April 2022, the Intergovernmental Panel on Climate Change (IPCC) released the Working Group 3 (WG3) Report, the third part of its sixth Assessment cycle.[1] The previous two reports in this Assessment Cycle were published in August 2021 and February 2022, respectively, the first with a focus on climate science and the second on the physical impacts of climate change.[2]

The WG3 Report concentrates on current efforts to mitigate climate change and outlines what is needed to limit global warming to 1.5C above pre-industrial levels. The report concludes that GHG emissions have continued to increase in the last decade, and that current climate pledges are not ambitious enough to cap warming to 1.5C with no or limited overshoot, and even 2C can be challenging. Scenarios in line with a net-zero by 2050 future all require substantial action in this decade, including winding down fossil fuel use and the complete phase-out of unabated coal-fired power. Carbon dioxide removal (CDR) is also seen as crucial.[3]

Fossil fuel powers and security

Russia supplies 40% of Europe's gas, and the invasion of Ukraine drove a sharp increase in fossil gas and oil prices leading to energy security challenges.[4] Germany's halt of the Nord Stream 2 Baltic Sea gas pipeline, as well as Europe's political moves to end its dependency on Russian imports require ramping up alternative energy supply. The quick fixes to the security issue are mostly based on other fossil fuels but expanding European gas supply would require substantial additional investment in related infrastructure, such as import terminals and pipelines for gas distribution to Central Europe from the coastlines. The risk posed by this is two-fold: long-term contracts based on a price premium may cause or exacerbate the economy's carbon lock-in, as well as resulting in an increase of emissions with irreversible climate consequences.[5]

All-time top 5 issuers

Name	Volume (USD)	Country	Theme(s)
1. World Bank (IBRD)	183.8bn	Supranational	GSS
2. European Union	113.4bn	Supranational	Green, Social
3. Fannie Mae	101bn	USA	Green
4. Caisse d'Amortissement de la Dette Sociale	99.7bn	France	Social
5. Republic of France	51.7bn	France	Green

Q1 2022 top 5 issuers

Name	Volume (USD)	Country	Theme(s)
1. World Bank (IBRD)	19.3bn	Supranational	GSS
2. Caisse d'Amortissement de la Dette Sociale	15.6bn	France	Social
3. Deutsche Bank	7.9bn	Germany	Green
4. Chile Government International Bond	6bn	Chile	GSS, SLB
5. Bank of China	4.8bn	China	Green

The push for low-carbon solutions

Accelerating the energy transition with early decommissioning of carbon intensive energy sources coupled with the uptake of renewables, which are already cheaper than natural gas at scale, can strengthen energy security whilst maintaining Europe's course toward its environmental targets.[6]

The transition of all economic sectors and activities requires accelerating investments in green and transition/interim activities and technologies. Whilst a baseline for green activities has broadly been defined in many taxonomies, definitions for transition activities are not yet as robust. The European Commission's recent Complementary Delegated Act (CDA) proposes criteria for gas and nuclear energy, which has drawn attention to the need to define transition activities that are required for key sectors to decarbonise but not necessarily compatible with net zero in or beyond 2050.

In March 2021, the Platform on Sustainable Finance published its *Final Report on Taxonomy extension options supporting a sustainable transition*, recommending the extension of the current EU Taxonomy to include transition activities.[7] The report introduces a new classification system to target:

- activities that require an urgent transition to avoid significant harm,
- intermediate or amber activities which need continued improvement over time,
- significantly harmful activities that require exit/ decommissioning, and
- low-environmental impact activities which are not considered green, but that do not cause significant environmental impacts.

Defining transition activities is the first step in creating a common language for market stakeholders. It is also critical to set a clear understanding of how each activity fits within a transition timeframe, and where possible sunset dates should occur. If developed promptly, the Extended Taxonomy could help address some of the challenges related to energy security; avoid fossil fuel lock-in; and improve scrutiny of the growing transition and sustainability-linked bond markets with added clarity on the activities and assets financed through these instruments. We discuss the latest on these market segments below.

Green bond issuance highlights

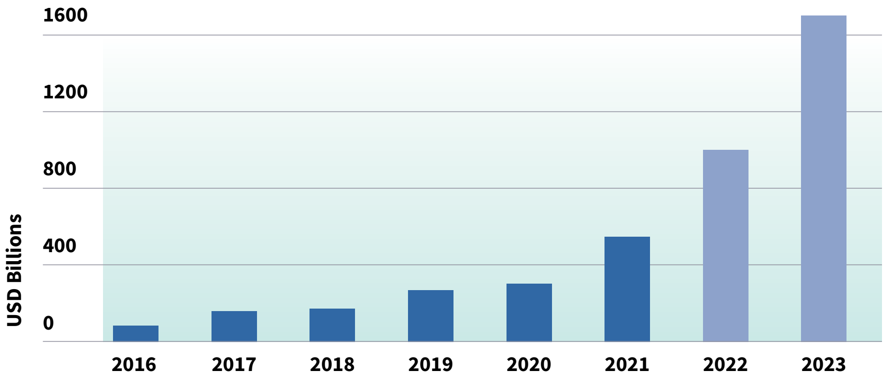
Green bonds included in the Climate Bonds Green Bond Database (GBD) in the first quarter of 2022 totalled USD83.5bn, down 38% compared to Q1 2021. The 27% increase YoY registered in the month of January was offset by declining volumes in the two following months (-18% and -69%, respectively) amid a turbulent market environment.

Developed Markets (DM) contributed 66% of Q1 2022 green bonds as their issuance volume decreased 47% from Q1 last year. Supranational (SNAT) issuance also decreased YoY to USD2.2bn (-63%), while Emerging Market (EM) volumes exhibited a slight increase from Q1 2021 (up 4% to USD26.5bn).

With USD47.2bn and 70 issuers, Europe based issuers led green-themed issuance this quarter, representing over half (56%) of the total volume. Asia-Pacific followed in second place with USD28.6bn (34%) and the largest number of issuers (92). The remainder was contributed by the Americas with a split between North America (7%) and LAC (0.3%).

China topped country rankings, by total amount issued (USD20.8bn or a quarter of the total) and number of issuers (60, 31%). Both indicators were up YoY: volumes increased 48% and the number of green bond issuers more than doubled from Q1 2021. Half of the country's volume originated from 11 financial corporates, while non-financial corporates were the most common issuer type (60% by number of issuers). The Dominican Republic was a newcomer to the green country list, with electricity company **EGE Haina's** debut green bond from January (USD20m).

Green bond market set to reach USD1tn by end of 2022



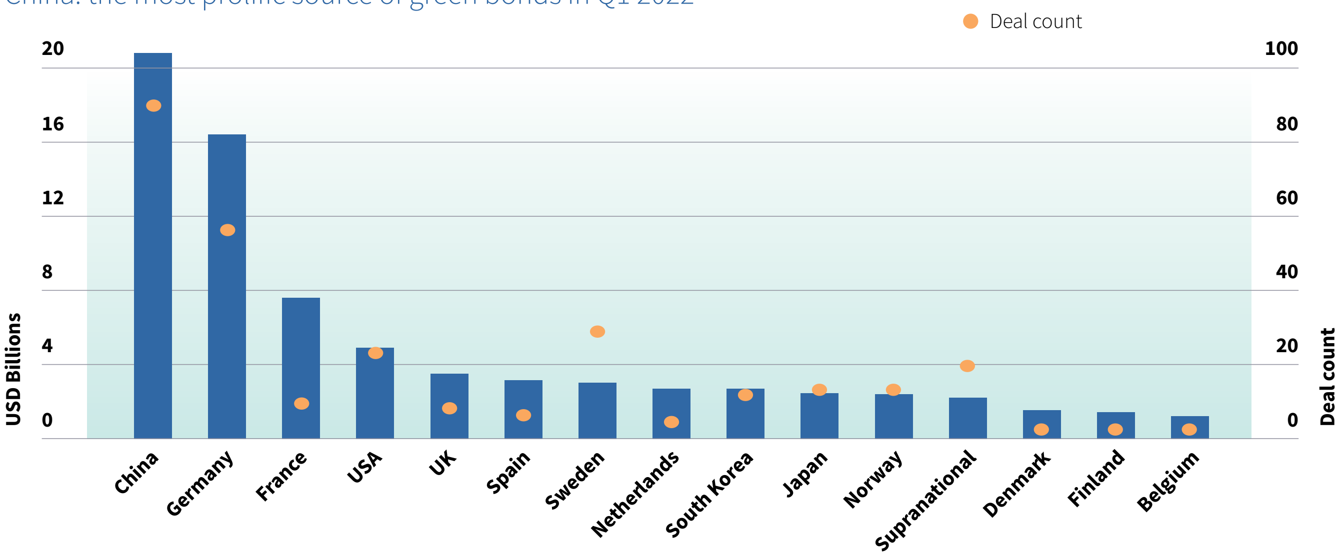
Top 10 Green issuers in Q1 2022

Issuer Name	Country	Amount issued (USD)
1. Deutsche Bank	Germany	7.9bn
2. Bank of China	China	5.6bn
3. Republic of France	France	3.2bn
4. E.ON	Germany	2.6bn
5. China Three Gorges Corporation	China	2.5bn
6. China Development Bank	China	2.4bn
7. DNB	Norway	1.7bn
8. Île-de-France Mobilités	France	1.5bn
9. EDP	Netherlands	1.4bn
10. Helaba	Germany	1.3bn

Q1 2022 green debt issuance: top 15 countries

While the number of issuers did not vary (53), green debt from financial corporates increased 41% from Q1 2021 to USD40bn. Deutsche Bank was the largest financial corporate issuer, with 18 deals totalling USD7.9bn earmarked for Renewable Energy, Energy Efficiency and Low-carbon buildings. The largest deal of the quarter was issued by Bank of China: a three-year RMB30bn (USD4.8bn) bond with the UoP earmarked for Renewable Energy projects, Low-carbon Transport, and Water and Waste Management. All other issuer types recorded a decrease compared to the equivalent period in 2021.

China: the most prolific source of green bonds in Q1 2022



Social & Sustainability bond highlights

Social and sustainability (S&S) bonds comprised 18% (USD37.2bn) and 28% (USD56.5bn) respectively of total labelled issuance in Q1 2022. Bonds issued in this quarter brought cumulative social-themed volumes to USD551.4bn, while sustainability issuance stood at USD563.9bn.

Social

Social issuance was down by 59% from Q1 2021 (USD90.5n). While January 2022 saw 66% growth year-on-year, February and March recorded an 82% drop. The 2020 and 2021 spikes in this theme were largely related to mitigating the most urgent impacts of COVID-19 and issuance has subsided along with the crisis.

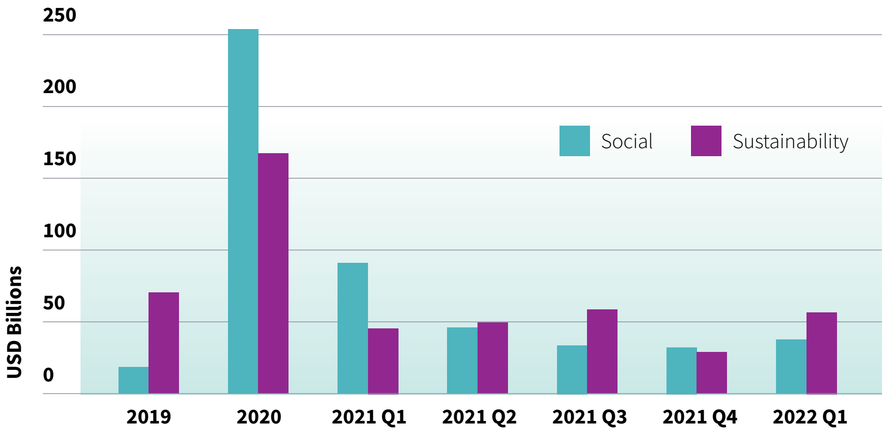
64% of social-themed issuance originated in Europe this quarter, with USD23.6bn (-40% vs Q1 2021). North America and SNAT took the second and third spots with similar volumes (USD5.2bn and USD5.1bn), each contributing 14%. Asia-Pacific volumes amounted to USD3.3bn or 9% of newly issued social bonds (-16% YoY).

By country, social bonds came mostly from France with USD15.6bn and 42% of the country's volumes originating from two government-backed entities, of which **Caisse d'Amortissement de la Dette Sociale** made the largest contribution (five deals worth USD15.6bn). The US placed second, with USD5.16bn (down 13% from Q1 2021). SNAT followed closely, with just under half of issuance (47%) originating from the European Union SURE programme.

Development banks saw an impressive increase: their issuance more than doubled to USD2.7bn compared to Q1 2021. With similar volume (USD2.6bn), non-financial corporates exhibited 85% growth. Issuance by local governments also increased to USD2.5bn (up 9% from the equivalent period last year).

Nearly all (98%) social bond issuance in this quarter was denominated in hard currency. EUR was the dominant currency (50%), its issuance originating from Europe, SNAT and Asia-Pacific.

Sustainability-themed bonds increased by 27% YoY



Sustainability

Sustainability bond volumes increased 27% YoY (from USD44.5bn in Q1 2021), with prolific issuance in January 2022 (+111% vs Q1 2021). Volumes in February and March were lower than those recorded in the equivalent period last year (-20% and -31%, respectively).

SNAT accounted for 41% of sustainability-themed issuance in Q1 2022 (USD23.2bn), up 51% from Q1 2021. The segment's growth was led by the World Bank (IBRD), which issued USD18.6bn of sustainability deals earmarked to support gender equality and education, clean energy, biodiversity conservation, and conflict mitigation among others.

The LAC region showed impressive development, with USD10bn of volume (+173% YoY). **Chile** made the largest contribution, with the issuance of a USD4bn sovereign sustainability bond in January 2022, the largest labelled USD-denominated issuance from the country to date. Q1 also saw the first sustainability deal from the Middle East, a 5-year, USD750m **Saudi National Bank** sustainability bond.

Almost half (49% or USD27.5bn) of sustainability bonds issued in Q1 2022 originated from development banks. This represents a 69% increase YoY. Government-backed entities registered the largest volume growth, up 728% from Q1 2021 reaching USD2.7bn. Sovereign issuance also jumped to USD4.57bn, a 204% increase, while local governments saw the largest YoY decline (-75% to USD873.3m).

Like the social bond space, most sustainability bonds in the first quarter of 2022 were issued in hard currency with USD representing just over half of the newly issued bonds (51%).

Top 10 Social issuers in Q1 2022

Issuer Name	Country	Amount issued (USD)
1. Caisse d'Amortissement de la Dette Sociale	France	15.6bn
2. Nederlandse Waterschapsbank NV	Netherlands	2.6bn
3. Citigroup Inc	USA	2.5bn
4. European Union	Supranational	2.4bn
5. Asian Development Bank	Supranational	2.3bn
6. Vonovia SE	Germany	1.8bn
7. Korea Housing Finance Corp	South Korea	1.3bn
8. CaixaBank SA	Spain	1.1bn
9. Shriram Transport Finance Co Ltd	India	0.95bn
10. SBB Treasury Oyj	Finland	0.8bn

Top 10 Sustainability issuers in Q1 2022

Issuer Name	Country	Amount issued (USD)
1. World Bank (IBRD)	Supranational	18.6bn
2. Government of Chile	Chile	4bn
3. Comision Federal de Electricidad	Mexico	3.5bn
4. BNG Bank NV	Netherlands	2.8bn
5. International Development Association	Supranational	2.3bn
6. Hanwha Life Insurance Co Ltd	South Korea	1.5bn
7. Development Bank of Japan Inc	Japan	1.4bn
8. Asian Infrastructure Investment Bank	Supranational	1.3bn
9. Southern California Edison Co	USA	1.2bn
10. Duke Energy Carolinas LLC	USA	1.15bn

Sustainability-linked bonds

SLBs are forward-looking, performance-based debt instruments issued with linkages to Sustainability Performance Targets (SPT) and associated Key Performance Indicators (KPI) at the entity level. When the targets of these deals are calibrated with appropriate, industry-specific ambition and financial materiality, SLBs can be a useful tool for issuers on a low-carbon transition trajectory as they finance whole entities in transition and can help to build experience and credibility in target setting.

Transition bonds

Transition bonds are UoP instruments designed to allow high emitters to shift towards cleaner, more sustainable operations and strategies on the way to net zero. When thoughtfully constructed, these debt instruments can be pivotal in supporting a global, economy-wide transition to the Paris Agreement targets.

Transition and Sustainability-linked bond highlights

Sustainability-linked bonds continue to grow, transition bonds led by Japanese issuers

The SLB segment has seen rapid growth as more and more entities, especially corporates, look to access sustainable finance that is not tied to specific projects or assets, but can help them define and signal to investors their overarching transition pathways.

The first quarter of 2022 saw continued growth in SLB-themed volumes, which represented 11.9% (USD24.bn) of total sustainable debt issuance in Q1 (+103.3% YoY).

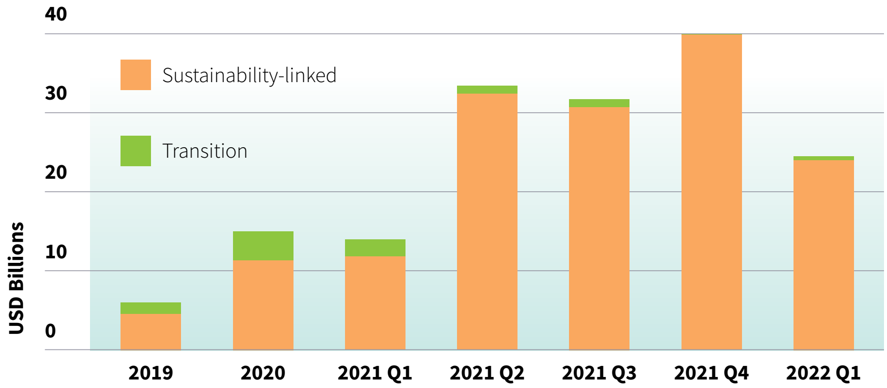
It is worth noting that the funding raised with SLBs is for general corporate purposes and therefore not always directly linked to green or sustainable projects. Focusing on market size in isolation can be misleading as it does not necessarily relate directly to a growth in green/sustainable infrastructure or projects, and the resulting emission reductions.

SLB segment self-standardises around GHG emission targets

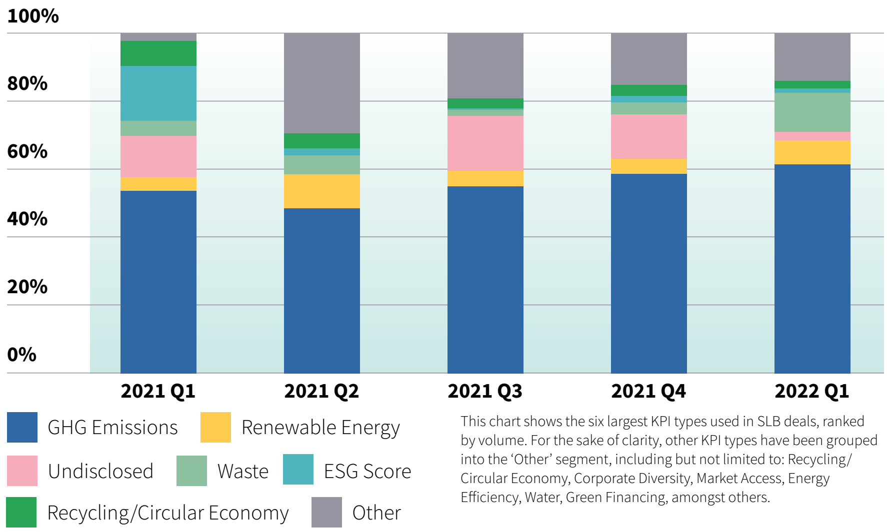
While issuers have the freedom to decide which Key Performance Indicators (KPIs) to tie their SLBs to, most issuers choose GHG emission targets to clearly demonstrate their commitment to transitioning towards net zero. This quarter marked the highest share of SLB volumes tied to GHG emission targets at 61% of KPIs used, up from 54% in Q1 2021. Of these targets, 77% were SBTi-verified following a steady rise since the lowest share of 55% in Q2 2021.

Waste and renewable energy-related targets represented the next most common groupings, with 11% and 7% of SLBs featuring these issues. Undisclosed KPIs and those related to an improvement in the issuer's ESG score have dramatically fallen to 2% and 1%, respectively. This is a welcome signal of increasing issuer efforts to improve market transparency. Climate Bonds calls on issuers and investors to maintain this momentum in tying SLB debt to ambitious, sector-specific, and credible KPIs.

SLBs volumes doubled in Q1 2022 vs Q1 2021



Over 60% of SLB KPIs were linked to GHG emissions in Q1 2022



This chart shows the six largest KPI types used in SLB deals, ranked by volume. For the sake of clarity, other KPI types have been grouped into the 'Other' segment, including but not limited to: Recycling/Circular Economy, Corporate Diversity, Market Access, Energy Efficiency, Water, Green Financing, amongst others.

First local government SLB: City of Helsingborg

In January, the **City of Helsingborg** issued the first ever public sector SLB: a 5-year SEK500m (USD55m) deal followed by a 4-year bond in March with a matching amount.

These bonds saw the city commit to reducing its GHG emissions by 61% by 2024 (vs a 1990 baseline) and featured a 15bps redemption premium in the event of missing the target. This is in line with Helsingborg's target to cut 85% of the city's GHG emissions by 2035.

The SLB Framework builds on the city's climate and energy plan to 2035, prioritising six areas of improvements, including GHG emissions; clean transport; circular resource use; clean and efficient energy use; and, interestingly, facilitating the growth of a sustainable municipal bond market.

The framework and associated 2035 plan are Paris-aligned and specific to how the city can achieve its targets, which are supported by the necessary governance frameworks and financing plans. However, the city, along with other public sector SLB issuers, faces a challenge related to carbon accounting speeds for regions and/or countries: it can take 18-20 months to deliver emission figures, thus creating a delay in evaluating and possibly triggering the financial mechanism in the SLB. Emerging technologies may help make verification for sovereigns and local governments simpler to achieve.

This quarter also saw the first public sector issuers enter the SLB market, including deals from a Swedish local government, a US muni, and the first sovereign SLB from **Chile**. These follow on the back of a World Bank report published in November 2021, which presented a framework for KPI selection in sovereign sustainability-linked bonds.[8]

Transition bond market kicks off in Japan

The first quarter of 2022 saw two new issuers enter the transition bond market: **Japan Airlines** and **Tokyo Gas**. Their bonds coupled with deals from experienced transition bond issuer **EBRD** brought the quarter's transition-themed volume to USD470m, and to a cumulative total of USD9.7bn.

Future debut issuers abound in this segment: **Export Development Canada** released a Sustainable Bond Framework which includes use of proceeds for transition bonds. Other Japanese companies, including **JERA Co. Inc.**, **JFE Steel**, **Idemitsu Kosan**, and **Mitsubishi Heavy Industries**, also published transition bond frameworks and SPOs signalling their intent to issue. These efforts draw on the *Basic Guidelines on Climate Transition Finance* published in May 2021 by Japan's Ministry of Economy, Trade, and Industry's (METI). METI has also published sector-specific technology roadmaps for the Cement, Paper/Pulp, Chemicals, Iron and Steel sectors, and is developing more, including guidance for SLBs jointly with other ministries. Climate Bonds also has transition bond criteria for the Cement, Chemicals, and Steel sectors currently out for public consultation.[9]

First sovereign SLB: Chile

In March, **Chile** made headlines for issuing the first-ever sovereign SLB in a USD2bn, 20-year deal. The GHG emissions targets are in line with Chile's Paris Agreement Nationally Determined Contributions (NDC), aiming for a majority (50%) share of renewables by 2028, and 60% by 2032. This deal not only serves as an ambitious example of a sovereign SLB, but also makes Chile the world's first and only sovereign to have issued in both a use of proceeds as well as sustainability-linked format, and across four themes (Green, social, sustainability, and SLB).

Chile's targets are very material: 77% of Chile's emissions in 2018 came from its energy sector, which underpins the rationale for the selection of its second KPI. While clearly an ambitious and innovative deal, Climate Bonds notes that following the trajectory of Chile's first KPI (and thus its NDCs) puts it on course for a below 2-degree pathway, falling short of a 1.5-degree scenario. This initial deal is still a strong demonstration of appropriate use of the SLB format and encourages Chile and other sovereign issuers to further their ambition in line with Paris pathways.

Japanese transition debuts

Tokyo Gas issued a dual-tranche (7- and 10-year) JPY20bn transition-labelled debut to fund a liquid natural gas (LNG) project, a gas and cogeneration-based energy network, and a hydrogen supply project. LNG, gas, and coal projects are inconsistent with a 1.5-degree pathway, and Climate Bonds urges Tokyo Gas, as well as other transition bond issuers, to avoid funding any fossil fuel projects, and to raise the level of ambition in their transition strategies.

Japan Airlines (JAL) issued a 5-year, JPY10bn (USD209m) transition bond in March on the same day as Tokyo Gas. The bond's proceeds will fund the purchase of fuel-efficient aircraft including the Airbus A350 and Boeing 787, with a stated emissions savings of 15-20%. While a clear pathway or roadmap for the aviation sector has yet to be agreed, this bond does not stand up to scrutiny especially in comparison to the only other aviation sector transition issuance from Etihad Airway whose transition UoP and sustainability-linked sukuk was printed in November 2020. Like JAL, Etihad's UoP focus allowed for investments in energy efficient aircraft, but also allocated funds to Sustainable Aviation Fuel (SAF), as well as further SAF-related R&D. Climate Bonds recognises that the introduction and use of energy efficient aircraft is a first step towards broader sectoral transition, especially until electric and/or hydrogen-powered aircraft become available. JAL's commitment to 10% SAF use by 2030 is also positive, especially given the company has announced that it will source the fuel from Fulcrum Bioenergy, who produces SAF from municipal solid waste – a great example of a circular, albeit scale-constrained, application. We urge JAL to continue to raise their level of ambition by quickly ramping up the use of SAF and exploring other ways to reduce emissions sharply in this decade.

First US muni SLB: Arizona Industrial Development Authority

In February the **Arizona Industrial Development Authority** (AZIDA) issued a USD200m dual-tranche (6- and 25-year) SLB to finance forest restoration activities in northern Arizona conducted by **NewLife Forest Restoration**. Both tranches are tied to the success of two KPIs by 2024: restoring 36,000 acres of forestland and increasing the proportion of logs sourced from restored forestland to 80%. AZIDA has also chosen one of the most material coupon step-ups in the market thus far: both tranches will see their coupon payments increase by 100bps in the event of missing the first target, and 50bps for the second, which sets it apart from typical market practice of 25bps, especially given the bond's base interest rates are 9% and 11%, respectively.

The proceeds of the bond, as well as NewLife's activities, will be focused on thinning the undergrowth in forests to reduce the immediate risk of naturally occurring yet catastrophic forest fires. In thinning the undergrowth, Newlife collects low-grade wood fibre to be manufactured into higher grade lumber, ready for use in construction. Newlife has also established systems for a 'Zero Waste' utilisation programme, in which all (waste) fibre collected can then be sold or used for pellets, lawncare products, and as bioenergy inputs. While not directly part of the region's transition plan, this bond not only strengthens Arizona's climate adaptation and resilience (A&R) programmes, but also helps develop a circular economy. The use of the SLB structure to help finance this programme demonstrates the flexibility of the instrument, and Climate Bonds hopes to see more issuers using SLBs and GSS bonds for financing A&R projects.

Kestrel Verifiers provided the external review and worked closely with the issuer and deal team to establish the meaningful KPI's.

Endnotes

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