SUSTAINABLE DEBT GLOBAL STATE OF THE MARKET 2023

Prepared by Climate Bonds Initiative

1. Introduction

Contents

This is the 13th iteration of Climate Bonds Initiative's (Climate Bonds) Global State of the Market Report. The scope of this report includes analysis of green, social, and sustainability (GSS) bonds considered to be in alignment with Climate Bonds database methodologies (Appendix) plus sustainability-linked bonds (SLBs).

By the end of 2023, Climate Bonds had recorded USD5.5tn of cumulative GSS and SLB (collectively GSS+) volume, of which USD4.4tn (80%) was found to be aligned. This indicates strong appetite for thematic debt, with the difference between the two numbers highlighting the rigour of Climate Bonds curation.

This report describes the shape and size of the aligned GSS+ debt market as of 31 December 2023.

Aligned GSS+ scorecard

	Green	Social	Sustainability	SLB	Aligned GSS+
Total size of market (cumulative)	USD2.8tn	USD821bn	USD768bn	USD48.6	USD4.4tn
Number of countries	96	49	69	23	106
Number of currencies	53	46	43	12	64

About the Climate Bonds Initiative

Climate Bonds is an international organisation working to mobilise global capital for climate action. It promotes investment in projects and assets needed for a rapid transition to a low-carbon, climate-resilient, and fair economy. The mission focus is to help drive down the cost of capital for large-scale climate and infrastructure projects and to support governments seeking increased capital markets investment to meet climate and greenhouse gas (GHG) emission reduction goals. Climate Bonds conducts market analysis and policy research; undertakes market development activities; advises governments and regulators; and administers a global green bond Standard and Certification scheme. Climate Bonds screens green finance instruments against its global Taxonomy to determine alignment, and shares information about the composition of this market with partners. The Climate Bonds team has also expanded its analysis to other thematic areas, such as social and sustainability bonds via the development of screening methodologies for investments that give rise to positive social impacts and added resilience. Certification against the Climate Bonds Standard (CBS) represents about 20% of global green bond market volumes. This scheme is underpinned by rigorous scientific sector-specific Criteria to ensure that Certified bonds and issuers are consistent with the well-below 2°C target of the Paris Agreement. Obtaining and maintaining Certification requires initial and ongoing third-party verification to ensure the assets meet the metrics of sector Criteria.

Climate Bonds Certification Scheme

Certification under the **Climate Bonds Standard v4** (CBS v4) goes beyond Use of Proceeds (UoP) instruments to include non-financial corporate entities and their SLBs. Launched in April 2023, the CBS v4 leverages Climate Bonds transparent science-based Criteria for non-financial corporate entities, credible SLBs and similar instruments, and provides assurance for investors that sustainability requirements have been met in respect of any Certified issuance. This work goes beyond sectoral transition pathways and includes key governance elements that indicate a company's preparedness to transition to net zero. Certification can be obtained by corporates with emissions already near zero as well as those with activities in high-emitting sectors, providing the corporate has suitably ambitious performance targets and credible transition plans. CBS v4 enables corporates aligned with 1.5-degree pathways, or those that will be aligned by 2030, to obtain Certification. SLBs issued by and in respect of the activities of qualifying non-financial corporates can also be Certified under the CBS v4.

2. Report highlights

By 31 December 2023, Climate Bonds had recorded aligned GSS+ instruments with cumulative volume of USD4.4tn from more than 43,000 instruments.

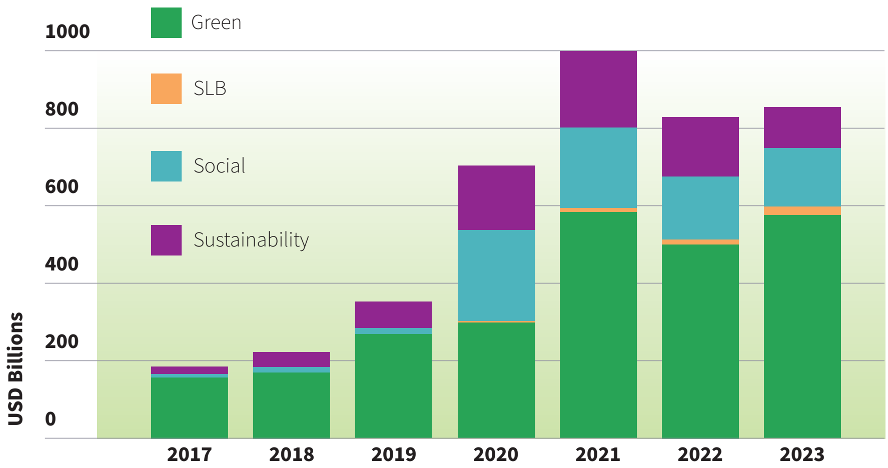
In 2023, Climate Bonds captured aligned volume of USD870bn, 3% more than the 2022 figure of USD842.8bn. Two thirds of this (67.5%) were from the green theme which added USD587.6bn reflecting a 15% YOY increase.

Conversely, there was a YOY decline in the volume of social and sustainability bonds by 7% and 30% respectively. The smallest segment, SLBs experienced a remarkable 83% increase in aligned volume, reaching USD21.4bn compared to USD11.7bn in 2022, and Climate Bonds expects the aligned SLB market to grow rapidly in 2024.

GSS+ market at a glance

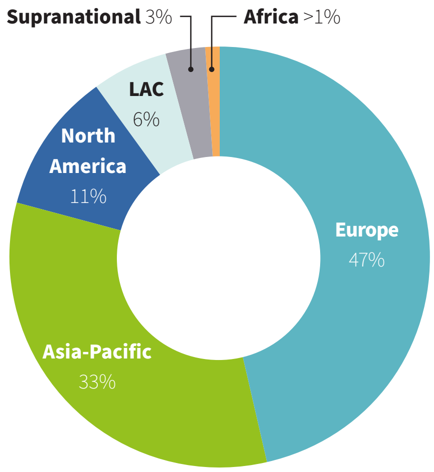
- Two thirds of the aligned deals were priced under the green theme worth USD587.6bn followed by social, sustainability, and SLB.
- Europe was the largest source of aligned GSS+ debt instruments with volume of USD405bn representing 46% of the 2023 total. The LAC region delivered a 49% spike YOY. Conversely, anti-ESG sentiment affected aligned GSS+ volume in the USA resulting in a 38% decline.
- Aligned SLB issuance exhibited an 83% increase in 2023, with deals from 32 issuers. Climate Bonds published its Sustainability-Linked Bond Database Methodology in 2023, and a corresponding data product was launched in early 2024.
- In 2023, 7323 aligned deals were priced which was 14% fewer than the previous year.
- May was the busiest month of the year with aligned GSS+ volume reaching USD88.5bn from 156 issuers.
- GSS+ deals were priced in 44 currencies with 63% of the issuance from the top two currencies, EUR (USD339.5bn) and USD (USD212bn).
- The sovereign GSS+ market reached a critical milestone in 2023 as Brazil became the 50th aligned issuer with its November sustainability deal. Cumulative sovereign GSS+ volume had reached USD485.6bn by the end of the year.

Aligned GSS+ issuance increased to USD870bn in 2023



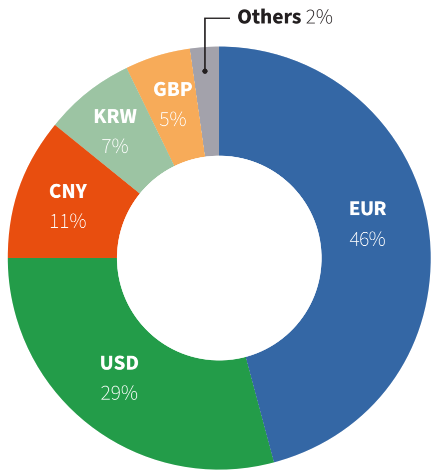
Source: Climate Bonds Initiative

Europe was the largest source of 2023 aligned volume



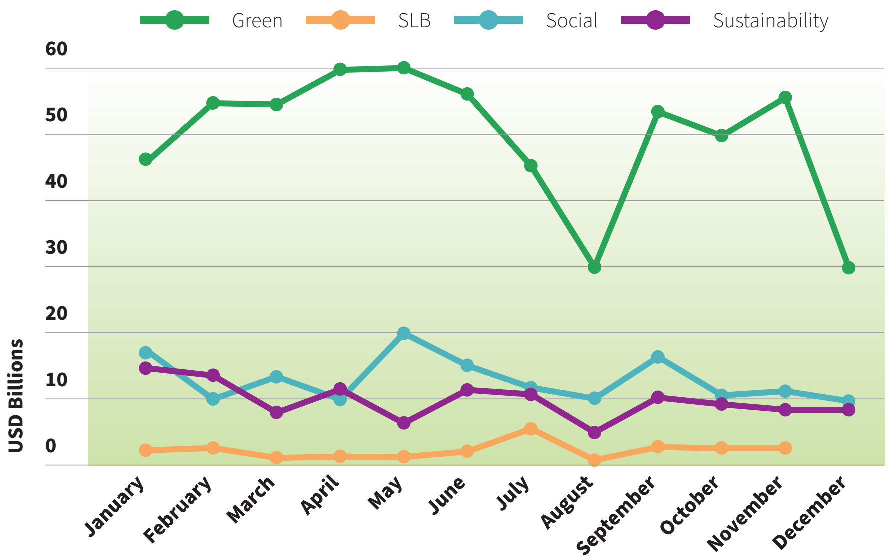
Source: Climate Bonds Initiative

63% of aligned GSS+ deals were EUR and USD in 2023



Source: Climate Bonds Initiative

Aligned GSS+ issuance peaked in May with USD88.5bn



Source: Climate Bonds Initiative

Aligned green debt scorecard

	2023	2022	Change YOY
Size of market	USD587.6bn	USD509.5bn	15.23
Number of issuers	846	815	3.8
Number of instruments	2743	3848	-28.72
Number of countries	68	54	25.93
Number of currencies	37	33	12.12

Aligned social debt scorecard

	2023	2022	Change YOY
Size of market	USD153.3bn	USD164.8bn	-6.97
Number of issuers	190	218	-12.84
Number of instruments	3540	3510	0.85
Number of countries	32	34	-5.88
Number of currencies	32	30	6.67

Aligned sustainability debt scorecard

	2023	2022	Change YOY
Size of market	USD107.7bn	USD156.7bn	-31.27
Number of issuers	221	223	-0.9
Number of instruments	1009	1115	-9.51
Number of countries	44	43	2.33
Number of currencies	25	30	-16.67

Aligned SLB scorecard (includes the aligned, strongly aligned, and aligning categories from Climate Bonds SLB Database)

	2023	2022	Change YOY
Size of market	USD22.9bn	USD11.7bn	95.4
Number of issuers	32	24	33.33
Number of instruments	45	33	36.36
Number of countries	13	13	0
Number of currencies	8	8	0

3. Green

Green bond market highlights 2023

- In 2023, aligned annual volume reached USD587.6bn breaking through the half trillion mark for the third consecutive year, and demonstrating an increase of 15% YOY.
- Aligned sovereign green volume increased by 45% to USD120bn against USD83bn in 2022.
- Europe dominated the aligned green bond market with volume USD309.6bn. The largest individual issuer was the United Kingdom (sovereign) with aligned issuance of GBP18.3bn (USD22.5bn) composed entirely of taps.
- In 2023, private sector issuers returned to the green bond market in force, as aligned issuance from non-financial corporate issuers grew by 29% YOY.
- May was the most prolific month in 2023 with aligned green issuance of USD61.6bn.

Europe delivers more than half of aligned green bonds

More than half of the 2023 aligned green bond volume originated from Europe (53%) contributing USD309.6bn, and 23% growth compared to the USD250.8bn captured in 2022. The ten largest issuers accounted for 39% of the volume, led by the United Kingdom which added GBP18.3bn (USD22.5bn) through multiple reopenings of its sovereign green bonds. Aligned green bonds emerged from Albania, Cyprus, Macedonia, and Montenegro for the first time in 2023.

Asia-Pacific was the second most prolific region for 2023 green bond issuance contributing one-third of the total aligned issuance volume (USD189.4bn) with 44% of that amount coming from China.

Green issuance from Africa picked up significantly with a YOY increase of 326% compared to 2022. Aligned volume was recorded at USD2bn in 2023 with the largest contributions coming from **African Development Bank** (USD521m) and **Kenya Power and Lighting Company** (USD300m). The number of issuers in Africa increased to eleven compared with only four in 2022.

North America (which includes the USA and Canada) and LAC recorded a decrease of 22% and 20% respectively YOY, with aligned volume of USD64.5bn and USD4.6bn. From North America, **California Community Choice Financing Authority** (CCCFA) was the largest contributor with USD5.9bn, while in LAC, **SQM Chile SA** recorded the largest volume with USD750m.

The 2023 green bond market in numbers

TOP 3 NON-SOVEREIGN ISSUERS

1. **KfW** (USD14bn)
2. **EIB (European Investment Bank)** (USD13.64bn)
3. **European Union** (USD11.6bn)

TOP 3 ISSUER TYPES

1. Non-Financial Corporate (USD171.7bn)
2. Financial Corporate (USD147.9bn)
3. Sovereign (USD119.6bn)

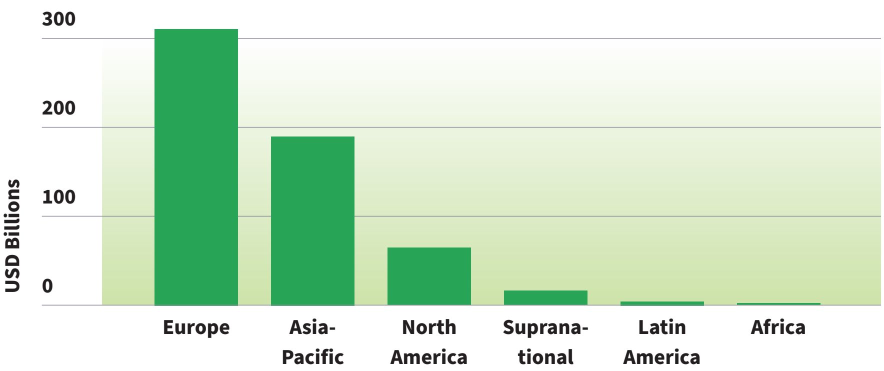
TOP 3 COUNTRIES

1. **China** (USD83.5bn)
2. **Germany** (USD67.5bn)
3. **USA** (USD59.8bn)

TOP 3 DEAL CURRENCIES

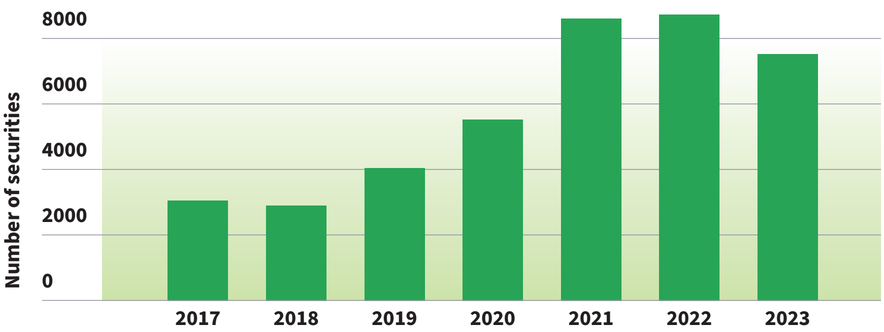
1. **EUR** (USD260bn)
2. **USD** (USD126.7bn)
3. **CNY** (USD79.2bn)

Europe led on 2023 aligned green volume



Source: Climate Bonds Initiative

The number of aligned green deals declined by 13% YoY



Source: Climate Bonds Initiative

A total of 2743 aligned green bonds were recorded in 2023, a decline of 29% compared to 3848 in 2022. There was a 49% drop in the number of such deals originating from the USA, which fell to 1246 against 2422 in 2022. This translated into a 14% drop in volumes to USD59.9bn from USD70bn, suggesting that the green bond market attracted fewer smaller issuers in the USA. The three most prolific issuers of 2023 by deal count were Fannie Mae (83 deals with combined volume of USD2.8bn), New York State Environmental Facilities Corp. (69 deals with combined volume of USD237m), and Indiana Finance Authority (53 deals with combined volume of USD563m) all from the USA.

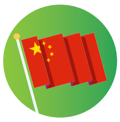
California Community Choice Financing Authority

The CCCFA is a Joint Powers Authority established to reduce costs for its members through pre-payment of long-term renewable energy power purchase agreements. By January 2024, it had issued nearly USD9bn of prepayment bonds for community choice energy providers, saving participating community choice ratepayers over USD45m annually since it was created in 2021. In 2023, it was the largest issuer of aligned green bonds in the USA, with 45 deals together worth USD5.9bn, and UoP earmarked for Renewable Energy.

Top 10 aligned green issuers in 2023

Issuer name	USDbn
United Kingdom	22.5
Germany	18.8
Italy	15.0
Hong Kong SAR	14.4
KfW	14.0
EIB	13.6
European Union	11.6
Austria	11.4
France	10.7
ICBC	9.9

China is the leading country source



China maintained its position as the largest source of aligned green bond volumes for the second time in a row contributing to 14% of the total in 2023. China's issuance for the year stood at USD83.5bn, a drop of 4% on the USD86.5bn captured in 2022.

Germany ranked second with USD67.5bn of aligned volume, or 11% of the total, and a 6.8% YOY increase. The top two issuers, the German government and KfW accounted for almost half of the volume originating from Germany, together pricing USD32.7bn.

The **US** green bond market has been marked by a notable prevalence of smaller deals from numerous issuers. In 2023, 1231 deals were priced in the US market with an average deal size of USD48.6m. China delivered 288 deals, 10% of the total and the second largest by number.

Albania, Cambodia, Cape Verde, Cyprus, Macedonia, Mongolia, Montenegro, and Uzbekistan all issued debut green bonds. Altogether, 17 instruments worth USD1.6bn originated from these countries in 2023. Uzbekistan's UZS4.2tn (USD348m) 2026 sovereign bond was one of three green instruments to come from the country in 2023, and the largest deal from the first-time green bond issuer countries. Uzbekistan's sovereign green bond will finance water conservation technologies, advancement in railway and metro transportation, sanitation and cleanliness operations in settlements, and the establishment of tree groves to combat wind erosion and sand encroachment at water management sites.

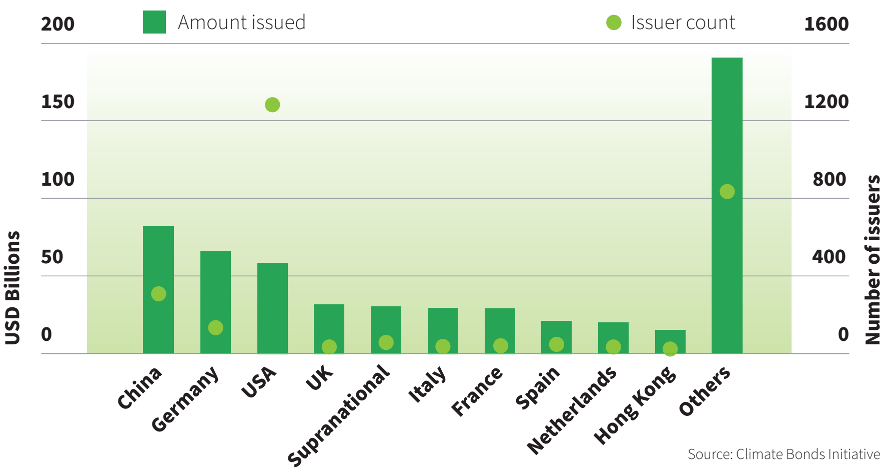
Africa's green bond trajectory

Africa is one of the most vulnerable regions to climate risks. In 2023, it achieved its largest volume of aligned green bonds since the African Development Bank (AfDB) priced the region's first green bond in March 2010. A total of eleven issuers priced 21 deals with combined volume of USD1.96bn in a mixture of currencies. Green loans were deployed by seven of the isusers, highlighting the potential for this instrument type to support green development in the region. The AfDB was the largest of the 2023 issuers, pricing eight bonds worth USD521m. The Use of Proceeds (UoP) were earmarked to support four project categories: Low-Carbon Energy, Sustainable Mobility, Energy Efficiency, and Sustainable Water and Wastewater Management.

Eleven African issuers priced green bonds in 2023

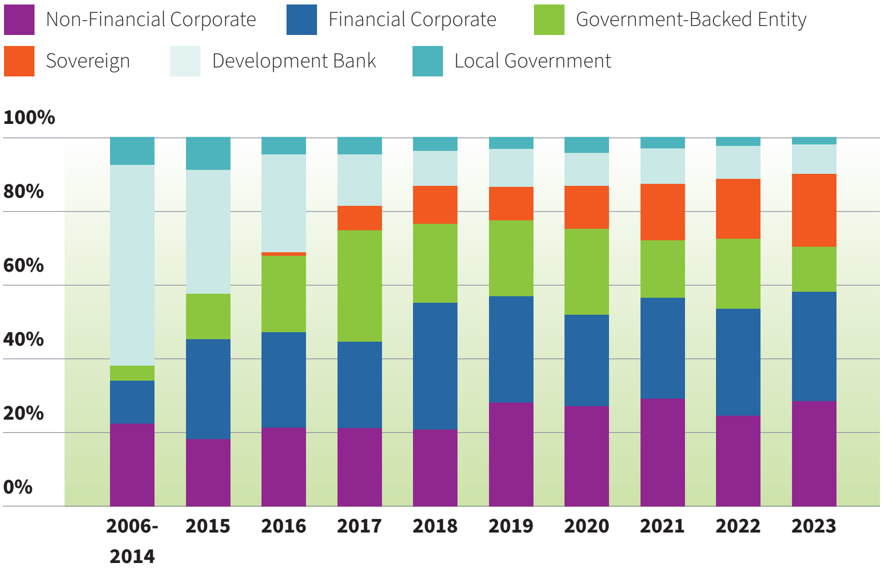
Issuer name	Country	Instrument Type	Number of deals	Currencies deployed	Total amount issued USDm
African Development Bank (AfDB)	SNAT	Bond	8	SEK, NOK, AUD	521.4
OCP Group	Morocco	Loan	2	EUR	216.6
FirstRand Bank	South Africa	Bond	2	ZAR	184.6
ACWA Power	Egypt	Loan	2	USD	288.0
Equatorial Coca-Cola Bottling Company	Egypt	Loan	1	USD	71.0
Águas de Ponta Preta (APP)	Cape Verde	Private Placement	1	CVE	5.0
Kenya Power and Lighting Company	Kenya	Loan	1	USD	300.0
Anergi Turkana	Kenya	Loan	1	USD	54.0
Red Sea Wind Energy	Egypt	Loan	1	USD	100.0
Bui Power Authority	Ghana	Loan	1	USD	24.0
Copperbelt Energy Corporation (CEC Renewables)	Zambia	Private Placement	1	USD	200.0
Grand Total			**21**		**1.96bn**

China was the largest source of green volume in 2023



Source: Climate Bonds Initiative

29% of aligned green volume came from non-financial corporate entities



Source: Climate Bonds Initiative

Top 10 country sources of aligned green bonds 2023

Country	Volume USD bn	Deal count
China	83.5	288
Germany	67.5	117
USA	59.9	1231
UK	32.7	26
Supranational	31.3	69
Italy	30.3	33
France	30.0	42
Spain	21.8	45
Netherlands	20.6	28
Hong Kong, China	15.6	21

Hard currencies prevail

EUR dominated the green debt market for the sixth consecutive year with 44% of the aligned volume amounting to USD260.2bn spread over 401 instruments. The USA was the second most prominent currency with USD126.7bn of the volume from 1353 instruments. Of the aligned green volume, 87% came from five currencies: EUR, USD, CNY, GBP, and INR. The INR experienced a massive YOY surge of 2454% reaching USD12.7bn. The largest share of this came from clean energy company **ReNew Power** in the form of an INR640bn (USD7.8bn) loan, and **India's** entry into the sovereign green bond market with four aligned deals worth INR260bn (USD3.1bn). GBP also gained substantial momentum, with a 79% YOY surge. This was largely due to an increased presence from the **UK** which priced GBP18.3bn (USD22.5bn) by tapping green gilts, compared to GBP10.4bn (USD11.5bn) in 2022.

Private sector brings more than half the green volume

Private sector issuers in the non-financial, and financial corporate sectors priced 57% of the green volume in 2023 (USD335bn). Non-financial corporate issuers contributed 29% of the 2023 market share spread over 692 aligned green instruments from 384 issuers amassing a sum of USD171.8bn. The Indian-origin company, **Renew Power** was the largest single non-financial corporate deal, with its USD7.8bn green loan. The deal was financed by Power Finance Corporation and Rural Electrification Corporation and the UoP was earmarked for a variety of expenditures including solar, wind, hybrid, energy storage, solar modules, cell manufacturing, and green hydrogen.

Financial-corporate issuers emerged as the second largest issuer type with a 28% share of aligned green volumes. The 572 instruments amounted to USD163.4bn. Chinese banks dominated, and the top three financial corporate issuers were **Industrial Bank Co. Ltd** (USD7.1bn), **Bank of China** (USD6bn), and **Industrial and Commercial Bank of China** (USD5.8bn). This contribution from Chinese issuers comes during the third consecutive year of a downturn in the region's housing market.[1]

Aligned volume from local government issuers remained broadly similar YOY with USD11.5bn, against USD11.7bn the prior year. **Queensland Treasury Corporation** made the largest contribution with an AUD3bn (USD2bn) deal financing low-carbon transport, solar energy, and water infrastructure.

Largest deal in each issuer type in 2023

Issuer type	Issuer name	USDbn
Development Bank	EIB (European Investment Bank)	5.4
Financial Corporate	Bank of Communications	4.3
Government-backed Entity	European Union	6.5
Local Government	Queensland Treasury Corporation	2
Non-Financial Corporate	Renew Power	7.8
Sovereign	Republic of Italy	10.1

SPO volume increases

Second-party opinion (SPO) was the preferred type of external review in 2023, with a 18% increase in volume YOY. However, the number of instruments dropped by 8% indicating that fewer instruments with large volumes obtained SPOs. Chinese and German entities exhibited the largest growth YOY with 46% and 7% respectively.

Climate Bonds promotes enhanced market transparency through disclosure and acknowledges this progress. Investors are increasingly demanding impartial evidence of the validity of the environmental credentials of green bonds, indicating a heightened awareness of greenwashing risks. Issuers are also eager to steer clear of liabilities resulting from potential errors.

In 2023, 51 SPO providers were involved in providing reviews for aligned green instruments. CICERO reviewed 375 instruments followed by Sustainalytics with 255 instruments.

Best practice in green bond framework development

KfW's updated Green Bond Framework

KfW is a national development bank funded by the German government. In 2023, it priced 15 aligned green bonds in nine currencies with a combined volume of USD14bn. In December 2023, KfW updated its Green Bond Framework, effective from January 2024 and has obtained a second-party opinion (SPO) from Morningstar Sustainalytics.[2] KfW has since priced two green bonds with AUD and NOK denominations respectively, totalling approximately USD1.2bn; and the bank also aims to raise up to EUR13bn from green bonds as a part of its funding plan for FY2024.[3]

While the bank estimates that 80% to 90% of proceeds raised from its green bonds will be allocated to Green Buildings and Renewable Energy (predominantly solar and wind energy) projects, the new Framework expanded the breadth of the eligible UoP that may be financed by its green bonds. For example, the Bank added new types of passenger transport vehicles like electric planes and vessels and associated infrastructure under Clean Transportation, production of hydrogen under Renewable Energy, incorporated new project categories including Forestry, Biodiversity and even some hard-to-abate activities including the production of steel, cement, and basic chemicals, in addition to the categories named in the Green Bond Framework published in early 2022.

The SPO concludes that most of the eligible green projects set out in the Framework are either partially or fully aligned with the SC Criteria of the corresponding EU Taxonomy activities.[4] For instance, the acquisition and construction of building projects aim for those that either comply with the Effizienzhaus 40 standard or have life cycle emissions below 24kgCO_2e/m^2/annum, of which the Effizienzhaus 40 standard translates to an impressive 60% improvement in primary energy demand (PED) relative to the Nearly Zero Energy Buildings (NZEB) standard required in Germany. While the EU Taxonomy only requires this figure to be 10% for the renovation of buildings, the Bank targets projects that lead to at least a 30% improvement in energy efficiency or to the Effizienzhaus/Effizienzgebäude 85 standard, which is equivalent to a 15% improvement in PED relative to NZEB, once again surpassing the EU Taxonomy's requirement.

Only a small number of the project categories are not aligned with the SC Criteria of the EU Taxonomy, such as hydroelectric and geothermal power generation, and KfW does not expect to allocate a meaningful share of the proceeds to such assets either. Nevertheless, the broadened Framework allows KfW to support a much more diverse range of assets under its loan programmes including the Climate Protection Programme for Corporates, accelerating Germany's transition towards net zero.

The Common Ground Taxonomy

The Common Ground Taxonomy (CGT) is a milestone work resulting from an in-depth comparison exercise that puts forward areas of commonality and differences between the EU and China's green taxonomies. The scope covers substantial contribution criteria for climate change mitigation. Other environmental objectives are not covered at this stage.

The results of the work are intended to provide confidence and transparency to investors and other stakeholders in the sustainable investment space.

Steel production in China financed by Bank of China (Luxembourg Branch)

Steel production accounts for around 7% of worldwide energy-related CO_2 emissions, making it the largest contributor to industrial emissions. Steel production is considered one of the hard-to-abate sectors, which are high emitting and may need to transform their strategy to meet goals of the Paris Agreement.

In October 2023, Bank of China Luxembourg Branch priced a 3-year, EUR300m green transition bond with the UoP earmarked for four projects related to the production or recycling of steel in Hebei Province, China. The projects are not eligible for Climate Bonds Certification under the recently published Steel Criteria, but still demonstrate a very high level of rigour and are aligned with other market standards. The deal was in alignment with Climate Bonds Green Bond Database (GBDB) Methodology.

The eligible projects are aligned with both the substantial contribution (SC) Criteria component of the technical screening criteria (TSC) required by the EU Taxonomy activity Manufacture of iron and steel, and Manufacture of iron and steel in the Common Ground Taxonomy.[5] It is also worth noting that the quantitative metrics and parameters required by both taxonomies are identical for steel production activity, namely the emission threshold set for different assets, and manufacturing steps such as iron casting and electric arc furnace (EAF). This bond highlights the ambition and some of the best practice to decarbonise production and recycling of steel in an emerging market economy, supported by transition finance.

4. Sustainability

Sustainability bond market highlights 2023

In 2023, the sustainability theme constituted 12% of aligned GSS+ deals.

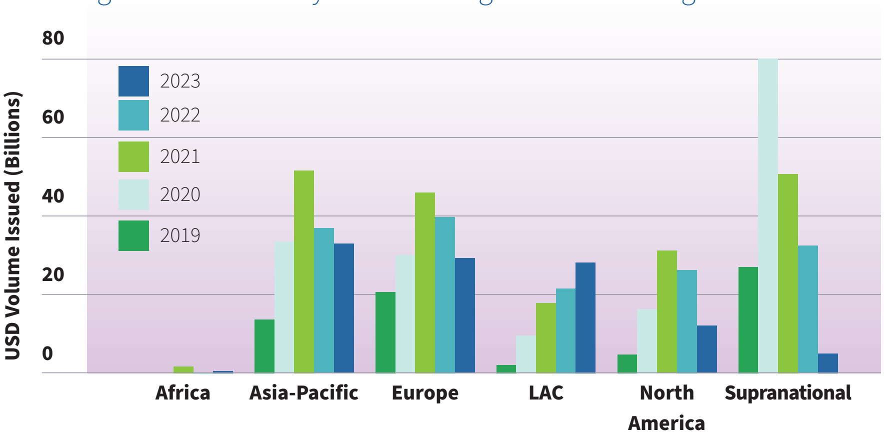
Aligned sustainability volume was USD107.8bn, a 31% drop compared to the USD156.7bn captured for 2022. Although the sustainability bond market has grown in the past decade, the development of regulatory standards has delayed issuance in some markets as issuers wait for clarity from regulatory guidance. The delayed release of the US Securities and Exchange Commission's climate disclosure rule created uncertainty for companies operating in the USA.[6]

The sustainability theme was backed by sovereign issuers such as Mexico, Peru, and Thailand whose sovereign sustainability bonds contributed 13% to aligned issuance (USD14.3bn).

Historically the largest contributor to the sustainability segment, issuance from development banks, declined by 71% in 2023 to USD15.5bn. The presence of development banks in the aligned sustainability space has gradually declined since its USD112.6bn peak in 2020.

In 2023, 109 entities issued debut sustainability bonds contributing USD39.2bn. In comparison, 125 entities issued for the first time in 2022, with a collective volume of USD42.3bn

2023 aligned sustainability volumes surged in the LAC region

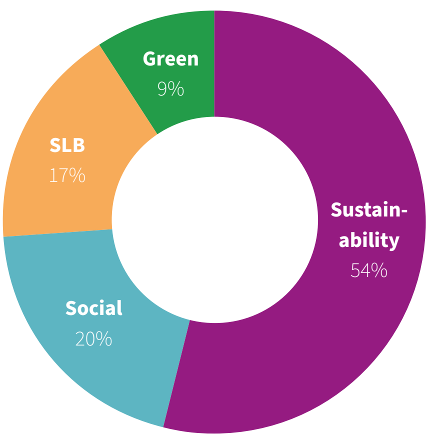


Source: Climate Bonds Initiative

Sustainability bonds support a just transition in LAC

LAC is the only region where sustainability bonds constitute the largest share of the aligned GSS+ debt market, reaching 47% by the end of 2023. Additionally, LAC is the only region to consistently increase its sustainability bond volume in the past four years. The prominence of sustainability instruments in LAC reflects the region's unique socio-environmental landscape, characterised by approximately 60% of the world's terrestrial biodiversity, and a myriad of marine and freshwater species.[7] LAC faces profound social disparities, being the most unequal region globally.[8] Sustainability bonds can play a crucial role in addressing these intertwined challenges and catalysing a just transition, as a vehicle to finance environmental and social projects in one instrument.[9]

Sustainability was the preferred theme in LAC in 2023



Source: Climate Bonds Initiative

Two LAC-based electric utilities mobilised sustainability bonds to finance initiatives that span renewable energy, climate resilience, and expanding critical services like education and internet access, thereby integrating socio-economic advancements with environmental stewardship. These examples underscore how sustainability bonds, with their dual focus on environmental and social projects, can be instrumental in channelling investments towards a just transition in emerging economies.

Eletrobras

In September 2023, Eletrobras, Brazil's leading electricity generation and transmission company, issued a BRL3bn (USD616m) 5-year sustainability bond. The bond's proceeds are earmarked for projects that not only bolster the company's commitment to decarbonisation, such as renewable energy generation, climate resilience, and ecosystem conservation, but also address crucial social needs. Key among these is extending renewable energy access to communities in the Amazon, traditionally dependent on diesel for power, thereby addressing both environmental sustainability and energy equity. The entity's framework also references educational initiatives for communities adjacent to Eletrobras' operations, reinforcing the social dimension of its sustainability agenda. This case exemplifies the versatility of sustainability bonds and their ability to address environmental betterment and social progress concomitantly.

LAC's growing influence in sustainable finance: highlights from 2023

- The source of USD52bn aligned GSS+ debt in 2023, 6% of global volume.
- The source of USD28.1bn in sustainability bonds, 36% of the global share.
- A 30% increase in sustainability deals from 2022 to 2023.

Comisión Federal de Electricidad (CFE)

In 2023, Mexico's Comisión Federal de Electricidad (CFE), the state-owned electric utility, priced three MXN and three MXV deals with a combined volume of USD1.1bn. The UoP was earmarked for renewable energy projects, energy efficiency enhancements, clean transportation, green building construction, and, notably, the expansion of telecommunications and internet access through its project 'Telecomunicaciones e Internet para Todos', which targets low-income populations. Leveraging CFE's existing infrastructure, this endeavour aims to enhance economic and social development by fostering new business lines, increasing income, and extending essential services provision.
This strategic move aims to cut greenhouse gas emissions and increase energy efficiency while bridging the digital divide, ensuring equitable access to information technology and broadband internet across Mexico. In its 2022 Sustainable Financing Framework, the issuer highlighted its ambition to support the low-carbon transition and expand access to essential services for the most vulnerable and underserved with its sustainable debt programme.[10]

Mexico is the largest country source

Aligned sustainability deals originated from 44 countries in 2023, including eight new ones, compared to 41 countries in 2022. Mexico made the largest contribution of USD11.9bn, supported by its sovereign deals, surpassing last year's leader SNAT. The contribution from SNAT issuers dropped by 85% YOY from USD47.9bn in 2022 to USD7.4bn in 2023. France made the second largest contribution (USD9.9bn) from 22 issuers, and USA (USD9.8bn) was third with aligned sustainability deals from 32 issuers.

Mexico takes the sustainability bond limelight in 2023

- Mexico was the largest country sourceof sustainability bonds in 2023, amounting to USD11.9bn, made up of 20 deals.
- The Mexican Peso was the third most popular currency with 18 deals.
- There were eight Mexican issuers in 2023, and 50% of the volume originated from the Mexican Government at USD6bn. In 2022, the issuer made headlines for its UN Sustainable Development Goal-aligned bond priced in its local currency.[11]

2023 aligned sustainability bonds in numbers

TOP 3 REGIONS

1. Asia Pacific USD32.9bn
2. LAC USD28.1bn
3. Europe USD29.2bn

TOP 3 COUNTRIES

1. Mexico USD11.9bn
2. France USD9.9bn
3. USA USD9.8bn

LARGEST ISSUER

By volume: Mexico Government (United Mexican States), USD6bn

By deal count: New York City Housing Development Corporation, 106 deals amounting to USD1.5bn

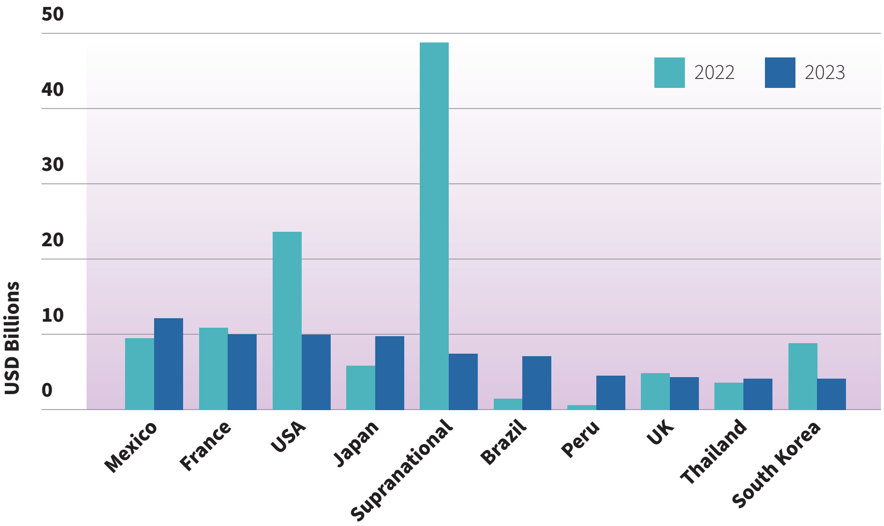
DEAL CURRENCY

- 72% of volume in hard currency
- Deals issued in 25 currencies
- Top 3 currencies by volume: USD, EUR, MXN

Eight countries emerged as new sources of sustainability deals in 2023

Country	Issuer	Amount USD
Cyprus	Sovereign	1.1bn
Sharjah (UAE)	Sovereign	1.0bn
Egypt	Sovereign	478m
Jordan	Arab Bank	250m
British Virgin Islands	Haitian BVI International Investment Development Ltd	210m
Mauritius	WLB Asset VI Pte Ltd	88m
Fiji	Sovereign	20m
Cape Verde	International Investment Bank	3m
Czech Republic	Raiffeisenbank	539m

Mexico leads aligned sustainability volume in 2023



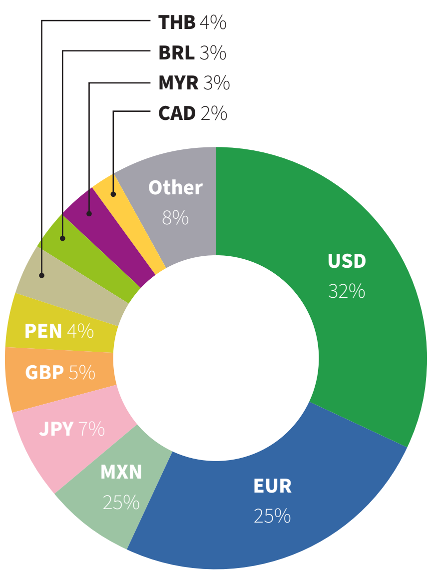
Source: Climate Bonds Initiative

Hard currencies take two-thirds of sustainability volume in 2023

In 2023, hard currencies (USD, EUR, JPY, GBP, AUD, CAD and NZD) contributed 72% of the aligned issuance volume. The USD dominated with 32%, most of which originated from outside the USA. Sustainability bonds from EUR and MXN took the second and third spots, with USD26.6bn (25%) and USD7.5bn (7%) respectively.

During 2023, aligned sustainability-bond issuers deployed 25 currencies, and for the first time the Cape Verdean Escudo (CVE) and Mexican unidad de inversión (MXV). The MXV is a currency value linked to the Mexican Peso (MXN) which has tracked inflation since its introduction in 1995 and was used by Mexico's Comisión Federal de Electridad (see below). Sustainability deals priced in local currencies help to mobilise domestic capital towards responsible investment strategies.

USD preferred for 2023 aligned sustainability bonds



Source: Climate Bonds Initiative

Issuers from 22 countries priced sustainability deals in USD

Country of origin	Total USDbn	Contribution to total	Country of origin	Total USDbn	Contribution to total
USA	9.81	28.3%	**India**	1.00	2.9%
Brazil	3.25	9.4%	**UAE**	1.00	2.9%
Mexico	2.94	8.5%	**Ecuador**	0.74	2.1%
Supranational	2.75	7.9%	**Jordan**	0.25	0.7%
Japan	2.10	6.1%	**Colombia**	0.23	0.7%
Cayman Islands	2.00	5.8%	**British Virgin Islands**	0.21	0.6%
South Korea	1.90	5.5%	**Singapore**	0.12	0.3%
Turkey	1.74	5.0%	**Mauritius**	0.09	0.3%
France	1.73	5.0%	**Taiwan**	0.08	0.2%
China	1.35	3.9%	**UK**	0.05	0.2%
Philippines	1.25	3.6%	**Fiji**	0.02	0.1%
Total				**34.6**	**100.0%**

Major second-party opinion providers for sustainability instruments in 2023

SPO Name	Instruments by volume (USDbn)	Instruments Reviewed
Sustainalytics	37.8	160
Vigeo Eiris	15.4	22
ISS ESG	11.6	23
S&P	5.5	68
DNV GL	5.4	11

External review volumes increase

- In 2023, 80% of all aligned sustainability bonds received external reviews from SPO providers, in contrast to 69% in 2022. There were 502 instruments reviewed in 2023, 1% more than the previous year (496 instruments in 2022).
- Of the 36 SPO providers that provided reviews for aligned sustainability instruments in 2023, 12 reviewed a sustainability bond for the first time.
- Sustainalytics was 2023's top SPO provider in the sustainability space, reviewing 160 deals with combined volume of USD37.8bn. As one of the largest overall SPO providers of 2023, it is no surprise that Sustainalytics has consistently reviewed the highest number of sustainability-aligned deals and volume in the past five years (668 deals more than the runner up).

5. Social

Social bond market highlights 2023

- In 2023, aligned social bonds contributed 18% to aligned GSS+ volume.
- Volume hit USD153.3bn, a decline of 7% compared to the USD164.8bn recorded for 2022, and the third consecutive annual drop in volume since the 2020 peak.
- Social bonds originated from Saudi Arabia (**SNB Funding Ltd.** AUD20m/USD13.3m), Philippines (**Bank of the Philippine Islands** PHP20bn/USD372m), and Indonesia (**Sarana Multigriya Finansial Persero PT** IDR700bn/USD43m) for the first time in 2023.
- **The Korea Housing Finance Corp** (KHFC) priced USD30.6bn, or 20% of the aligned social volume in 2023, beating **CADES** (USD23.9bn), the largest issuer in 2022.

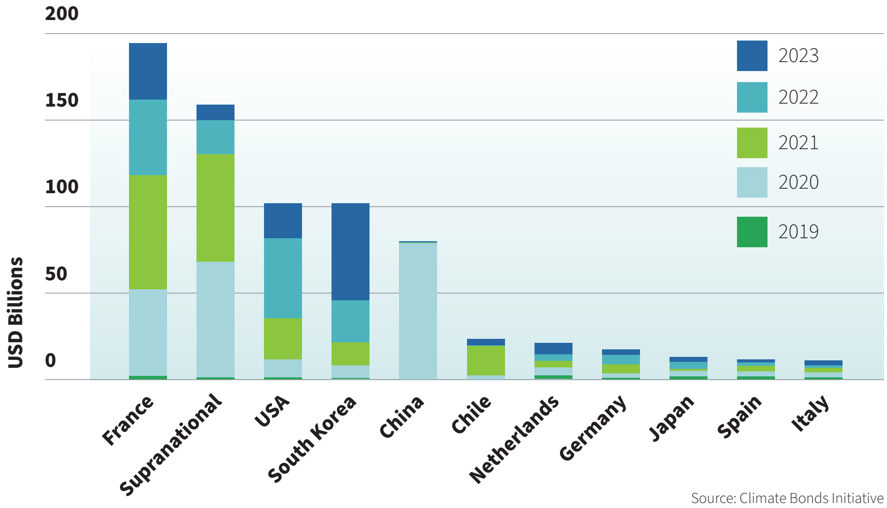
Korea Housing Finance Corporation

- KHFC significantly stepped up its social bond volume in 2023, pricing 450% more than in 2022 (USD5.6bn), channelled through 276 deals.
- Its Sustainable Financing Framework was introduced in 2023, extending the reach of its earlier Social Covered Bonds Framework (2018), and Social Financing Framework (2019) to include green project categories for Green Buildings, Energy Efficiency, and Renewable Energy. Social project categories remain as Affordable Housing, which enables long-term borrowing to encourage widespread home ownership.[12]
- Sustainalytics believes that KHFC's mortgage loan products will be used to improve housing welfare of vulnerable populations by providing low-interest, fixed rate loans to support housing in South Korea.[13]

Social issuance takes off beyond Europe

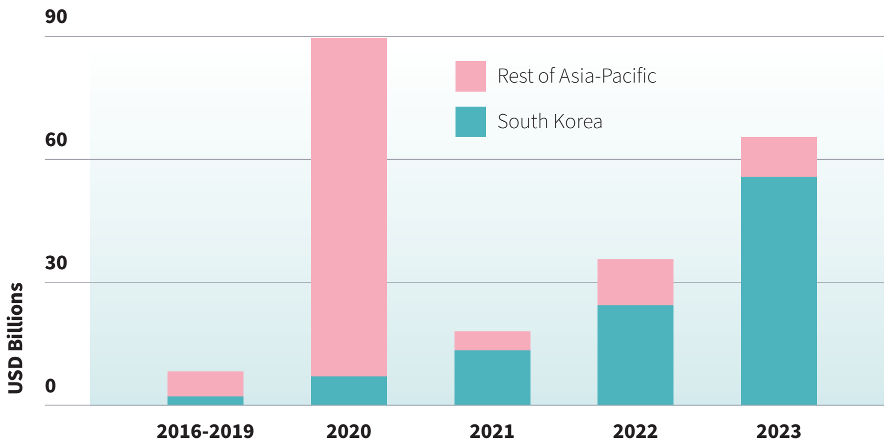
In 2023, the APAC region was the largest source of aligned social bonds contributing 43% (USD65.5bn). Since 2006, the largest cumulative volume has come from Europe at USD309.2bn, but Asia Pacific has also demonstrated commitment to the theme with USD217bn originating from entities operating in 15 countries from China to Saudi Arabia.

South Korea dominates aligned social volume in 2023, France leads 5-year volume



Source: Climate Bonds Initiative

Aligned social volume from South Korea has surged



Source: Climate Bonds Initiative

Top ten aligned social bond issuers in 2023

Issuer	USDbn
Korea Housing Finance Corp	30.6
CADES	23.9
Industrial Bank of Korea	5.9
BNG Bank NV	5.1
Korea Asset Management Corp	5.0
Korea SMEs and Startups Agency	3.4
Chile	3.4
The Hong Kong Mortgage Corp Ltd	2.5
Colombia	2.5
Council of Europe Development Bank	2.4

The 2023 aligned social bond market in numbers

TOP 3 REGIONS

1. **Asia-Pacific** USD65.5bn (43%)
2. **Europe** USD54.7bn (36%)
3. **North America** USD20.2bn (13%)

TOP 3 COUNTRIES

1. **South Korea** USD55.9bn (36%)
2. **France** USD32.7bn (21%)
3. **USA** USD20.2bn (13%)

TOP 3 ISSUER TYPES

1. **Government-backed entity** (USD91.3bn)
2. **Financial corporate** (USD25.5bn)
3. **Local government** (USD18.2bn)

South Korea has implemented strong government policy to support social welfare benefits, which is reflected in the country's position as the largest source of cumulative social volume in Asia-Pacific. In 2023, it was responsible for 85% of Asia-Pacific's aligned social volume through 474 deals; 58% of which were supplied by KHFC. Social bonds offer huge untapped potential to support social advancement in EM. Sovereigns and government agencies can deploy the social bond market to support ambitions of increased social equality and inclusion.[14]

USD and KRW tie as preferred currencies for social

In 2023, 2900 aligned social deals were priced in USD, followed by KRW with 453 deals. However, the two currencies tied for the amount issued with both reaching USD47bn. The Korea Student Aid Foundation was the first to price aligned social bonds in KRW in 2019 through four deals with combined volume of KRW200bn (USD120m). Since then, social issuance in KRW has progressively grown with four entities pricing social deals in KRW for the first time in 2023.

Climate Bonds expects that the supportive policy environment together with the expansion of South Korea's battery and semiconductor market will continue the need for significant sustainable debt financing in the future, which could see KRW as a front runner ahead of other Asian currencies.[15]

Sovereign issuers return to the social market in 2023

- Sovereigns returned to the social bond market in 2023, having been absent in 2022. Chile priced five aligned deals, and Colombia priced two, collectively worth USD5.9bn.
- In 2023, government-backed entities priced the largest volume of aligned social bonds (USD91bn), USD8.4bn less than the previous year, but 3.6 times the volume priced by financial corporates, the second largest issuer type (USD25.5bn).
- Local governments issued the largest number of deals at 2562, a 21% increase from the prior year. Local government and not-for-profit issuers were the only issuer types to increase their deal counts in 2023 compared to the previous year, and local governments were the only issuer type to increase the volume issued in 2023.

External Review

- In 2023, 1724 socially-aligned deals were externally reviewed, 11% lower than the year before (1942). Even so, 88% of all aligned deals received an SPO, the same percentage as the year prior.
- 15 SPO providers reviewed social bonds for the first time in 2023. Among them, Kestrel reviewed 676 aligned social instruments from 12 issuers.

Four issuers priced social bonds in KRW for the first time in 2023

Issuer name	Amount issued KRW	Amount issued USD	Number of deals	Use of Proceeds
Ansan Urban Corp	135bn	107m	3	Affordable Infrastructure
IGIS Residence REIT Co Ltd	10bn	7.6m	1	Microfinance, Affordable Infrastructure, Equality
Kiup Kiwoom e Securitization Speciality Co Ltd.	30bn	22.7m	1	Healthcare, Employment, Education, Microfinance, Affordable Infrastructure, Equality, Social Adaptation & Resilience
Woori Financial Group Inc.	200bn	149m	1	Healthcare, Employment, Education, Affordable Infrastructure, Equality

TOP 5 CURRENCIES FOR ALIGNED SOCIAL BONDS 2023

1. **KRW** USD47.12bn
2. **USD** USD47.06bn
3. **EUR** USD40.8bn
4. **CLP** USD3.4bn
5. **JPY** USD2.9bn

KRW SOCIAL VOLUME HISTORY

2023: USD47.12bn
2022: USD20.6bn
2021: USD9.6bn
2020: USD1.6bn
2019: USD0.2bn

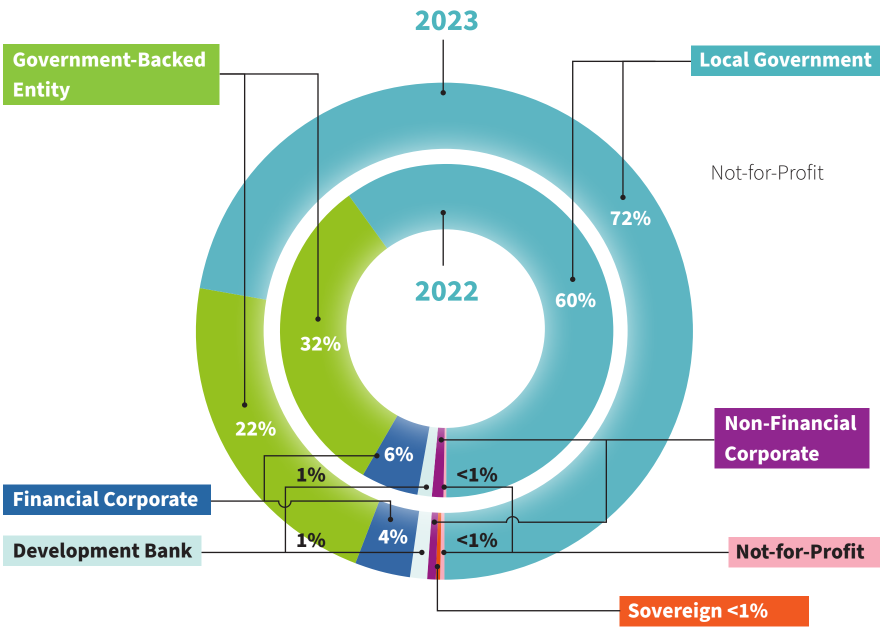
TOP 5 SPO PROVIDERS OF 2023 BY COUNT:

1. **Kestrel** 676
2. **Sustainalytics** 416
3. **Korea Ratings** 268
4. **S&P** 171
5. **KIS Rating** 52

TOP 5 SPO PROVIDERS OF 2023 BY VOLUME:

1. **Vigeo Eiris** USD29.4bn
2. **Sustainalytics** USD26.3bn
3. **Korea Rating** USD25.bn
4. **ISS ESG** USD13.3bn
5. **KIS Rating** USD9.1bn

Local government issuers continue to dominate the social bond market in 2023



However, its deals only constituted 3% (USD4bn) of the total aligned social bond issuance volume. Kestrel is a US-approved verifier that provides opinions in alignment with the Green and Social Bond Principles, Climate Bonds Standard and Criteria, and the Sustainability Bond Guidelines.[16] In 2023, the 12 issuers that obtained an SPO from Kestrel were local governments focused on housing finance or social infrastructure development..

6. Sustainability-linked bonds

This section is based on the Climate Bonds Sustainability-Linked Bond Database (SLBDB) (Appendix). Both aligned and non-aligned SLBs are included in this section to highlight where improvement is needed.

Sustainability-linked bond market highlights 2023

- In 2023, aligned SLBs contributed 2% to GSS+ volume.
- Aligned SLB volume exhibited 95% growth compared to USD11.7bn recorded for 2022.
- The quality of SLBs is improving overall; 35% of the amount issued was aligned in 2023 versus 14% in 2022 and 10% in 2021. This points to potential for the aligned SLB market to expand.
- Despite the lack of growth since the big SLB boom of 2021, the market is maturing. A greater number of currencies, issuer domiciles, and issuer types are being added each year, contributing to the market's diversification.

Cumulative results: partial GHG scope coverage is the top reason for non-alignment (by amount issued)

Alignment	Category / Reason	Amount (USDbn)	Bonds	Issuers
Aligned	Fully aligned	42.3	90	58
	Aligning	4.7	13	4
	Strongly aligned	1.6	6	4
	Total aligned	**48.6**	**109**	**66**
Not aligned	Lack of GHG targets	73.1	327	209
	Partial GHG scope coverage in targets	110.4	205	115
	Lack of target disclosure	20.9	86	58
	Not in line with pathway	11.9	24	19
	Use of economic intensity target	9.5	20	13
	Partially not in line with pathway	6.1	15	13
	Total not aligned	**231.9**	**677**	**427**

NB: Alignment is determined for each SLB. Non-aligned figures represent bonds that failed to meet each requirement under the SLBDB's funnel methodology approach, which particularly affects 'not in line with pathway' figures.[21]

Assessing credibility and ambition through SLBDB alignment

An in-depth analysis of structural SLB features and transition plans is beyond the scope of this report but was included in Climate Bonds' dedicated SLB report released in March 2024.[17] Climate Bonds formally launched its SLBDB in January 2024. Its primary objective is to help users, particularly investors, to identify deals with targets that are credible and aligned with the 'well below 2°C' goal of the Paris Agreement, as well as to highlight best practice and guide issuers. The assessment methodology incorporates some aspects of Climate Bonds Standard version 4.0 (CBS v4.0), including the Climate Bonds Sector Criteria where available.

The SLBDB screens deals under a methodology that classifies SLBs as aligned or not aligned based on multiple requirements. Three categories for aligned bonds exist:

- **Fully aligned**: targets are aligned with the sector-specific pathway (emissions below required threshold).
- **Strongly aligned**: targets are not currently aligned but will be by 2030.
- **Aligning**: targets do not meet absolute/intensity threshold but are aligned on a percentage reduction basis.

A large proportion of the market does not meet the SLBDB alignment requirements. Of the cumulative 14% of SLBs and 17% of the amount that do, the vast majority are fully aligned.

Reasons for non-alignment

Lack of GHG targets is the top reason for non-alignment by bond and issuer count, while partial emission coverage is the leading reason by amount.[18] Seven of the top ten issuers have all or most of their SLBs linked to KPIs or targets that do not include scope 3 emissions, even though these represent the largest source of GHG emissions in their sectors.

Setting targets that are not in line with relevant pathways is third on the list of non-alignment reasons. Issuers should be setting sufficiently ambitious targets that meet Paris-aligned decarbonisation pathways (or at least meeting the same percentage reduction, i.e., considered aligning).

The ranking of non-alignment reasons has remained similar every year since 2020, except for lack of GHG targets where the share dropped markedly in 2023.[19]

Record-high alignment reached in 2023

The share of aligned SLBs rose to a record-high in 2023, reaching 35% of the amount issued and 20% of bonds (versus 14% and 13% in 2022, respectively). The positive trend was particularly visible in H2 2023, with the aligned amount more than doubling to 48% versus 23% in H1.

The increase is driven by repeat issuers that had already priced aligned SLBs, including those bringing relatively large volumes such as Chilean paper products company **Inversiones CMPC SA** (MXN1.6bn/USD94m), German cement producer **Heidelberg Materials** (EUR750m/USD792m), and the **Republic of Chile** (two USD, one EUR, two CLP one of which tapped twice, and one CLF SLBs) with a combined volume of USD8.6bn). H2 also saw debut SLB issuers come to the market with ambitious and credible deals, such as Mexican cement company **Cemex** (two deals with combined volume of MXN6bn/USD332m), **Japanese industrial Nishimatsu Construction** (JPY20bn/USD143m), and German retail and tourism cooperative **REWE Group** (EUR900m/USD966m).

These are promising signs for the future of the SLB market, and Climate Bonds is supporting the market's development with policy recommendations, sector Criteria, research, and engagement with issuers and investors. Climate Bonds encourages all market participants to reach alignment of at least half of SLBs during 2024, with credible transition finance contributing to decarbonisation of the hard-to-abate sectors.

Emerging market issuance on the rise

- The share of SLBs originating from EM reached 33% of the volume and 48% of total SLBs in 2023, the highest shares since 2019. Cumulatively, 72% of the volume and 59% of SLBs originate from DM.[20]
- In 2023, Europe was the source of 48% of SLB volume (USD31.7bn), reflected in the volume of aligned deals (USD11.5bn). The three largest aligned issuers from the region each priced two deals; led by **Heidelberg Cement** which priced combined volume of EUR1.5bn (USD1.6bn), Danish mobile network provider **TDC Net AS** whose pair of SLBs amounted to EUR1bn (USD1.1bn), and **Air France KLM** with EUR1bn (USD1.1bn).
- Asia-Pacific ranked second driven by issuance from China; however, the four issuers of aligned debt were all from Japan, led by **Mitsubishi Estate Co. Ltd**, which priced a JPY30bn (USD218m) SLB in May.
- Latin America was the only region to grow in 2023, with total SLB volume originating from the region increasing by 49% YOY. The growth in aligned issuance was even more compelling at 397% to USD10.4bn in 2023 from USD2.1bn in 2022. The region was propelled by aligned SLB issuance from **Chile** (USD8.6bn) and four corporate issuers topped by Mexican food company **Gruppo Bimbo** with two deals worth MXN15bn (USD860m).
- North America experienced a 41% drop in volumes in 2023 to reach its lowest share of the market since 2020 (9.5%) so increasing deal flow in the region while ensuring credibility is a priority. Only eight SLBs from six North American issuers came to market during the year, among which only **Jacobs Engineering Group** achieved alignment with its USD500m 10-year SLB.

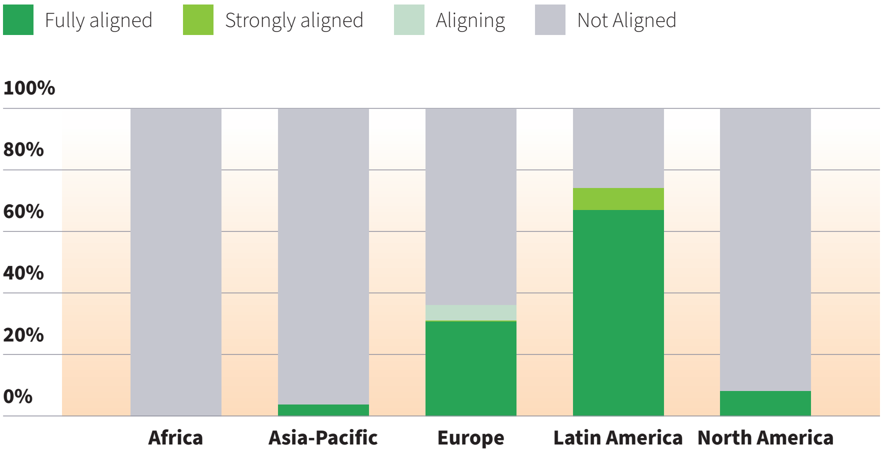
Two Latin American countries in the top ten (and neither is Brazil)

- In 2023, Italy was the largest source of SLBs. Chile ranked second, fuelled by continued strong sovereign issuance. Together with the Netherlands and Georgia, Chile was the only country to achieve 100% of aligned SLBs during the year.
- China placed above Germany for the first time since 2019 and maintained its clear dominance in bond and issuer counts, with SLBs accessed by a broader pool of relatively small issuers. Among the top ten issuer domiciles, China's average bond size (USD107m) is only comparable to that of Japan (USD135m) and Mexico (USD166m). Seventeen countries were the source of SLBs with none aligned to Climate Bonds SLBDB during 2023 including China. Non-alignment was mostly due to lacking GHG emission KPIs or targets.

Top ten sources of aligned SLBs in 2023

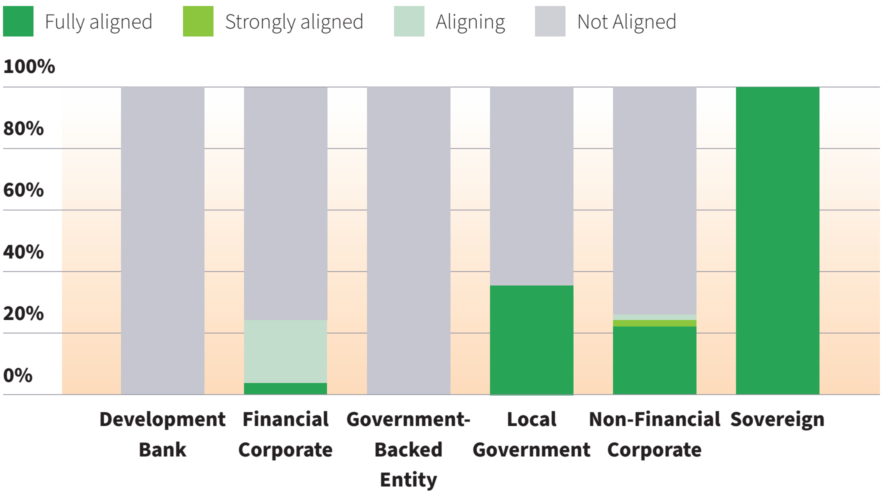
	Amount issued (USDbn)		Number of bonds		
Issuer domicile	**2023**	**Aligned %**	**2023**	**Aligned %**	**Number of issuers**
Chile	9.1	100%	8	100%	3
Netherlands	1.3	100%	2	100%	2
Georgia	0.2	100%	1	100%	1
Sweden	0.6	68%	12	67%	6
Denmark	3.2	67%	6	67%	4
Finland	1.3	67%	5	60%	5
France	7.2	51%	13	46%	11
Germany	5.1	42%	12	25%	11
Mexico	3.1	38%	19	21%	10
USA	2.5	20%	4	25%	4

The LAC region demonstrates the strongest alignment



Source: Climate Bonds Initiative

Chile ensured sovereign alignment in 2023



Source: Climate Bonds Initiative

- The top three issuer domiciles cumulatively by amount issued are Italy (USD49.5bn, 63% of which from Enel), France (USD28.7bn), and Germany (USD23.0bn).
- Mexico is emerging as a force with a considerable 38% of volumes aligned with the SLBDB during the year.

Growing involvement from public sector

- **While issuance volumes were lower in 2023 than in 2022, 2023 was the first year with issuance across all issuer types.** Non-financial corporates continue to dominate the market (84% cumulatively), but their share has been dropping steadily since 2019, reaching 77% in 2023.

Development Bank of Rwanda issues landmark deal

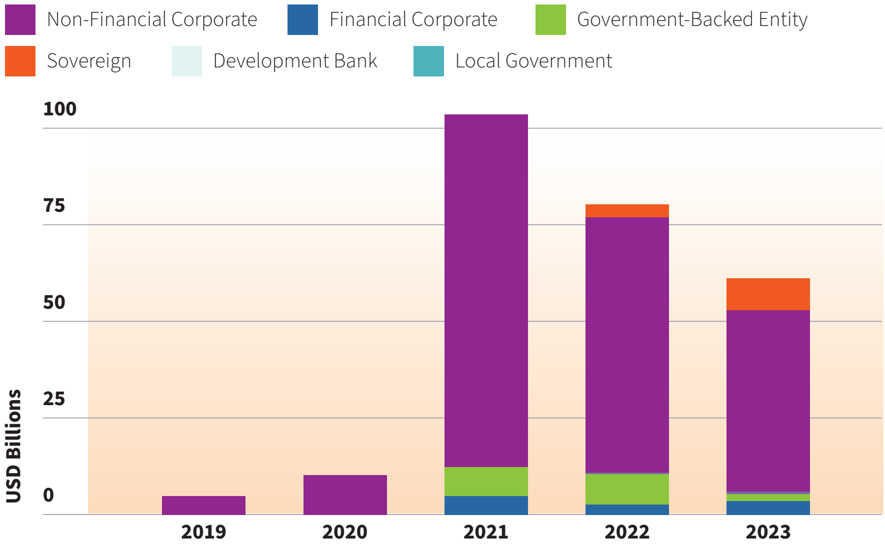
2023 was also the first year with an SLB issued by a development bank. The Development Bank of Rwanda (BRD) issued a seven-year RWF30bn (USD24m) SLB in October 2023, setting an important milestone as the first SLB from East Africa and the first issued globally by a national development bank.

This was achieved with a partial credit enhancement from the World Bank made to the Government of Rwanda via the Access to Finance for Recovery and Resilience (AFIRR) project.[22] The BRD's initiative emphasises the role of national development banks in advancing the sustainability agenda, including by supporting local financial institutions. The deal was considered not aligned with the SLBDB as it did not include GHG emissions KPIs or targets.

Wide range of economic sectors are represented

- **Despite a contraction in the overall SLB market, 2023 was the first year with issuance across all the economic sectors recorded in the Climate Bonds SLBDB.** This broad deployment highlights the flexibility of SLBs as general-purpose funding instruments. It also demonstrates that issuers in any economic sector can tie their financing commitments to decarbonisation ambitions even if they do not have specific green expenditures.
- Industrials ranked first in 2023 by a wide margin across all metrics (amount issued, number of bonds, number of issuers). **Autostrade per l'Italia** was the largest issuer during 2023 pricing USD1.6bn across two deals, neither of which was aligned due to the use of economic intensity (revenue) in scope 3 KPIs or targets.
- Spurred by Chile's sovereign deals, the government sector was the second largest in 2023, followed by oil & gas. No deals from the oil & gas sector were aligned, mostly due to lack of material scope 3 emissions inclusion.

Sovereign and local government SLB volume grew in 2023



Source: Climate Bonds Initiative

Industrials top in 2023 by amount, bonds, and issuers

	Amount issued (USDbn)		Number of bonds		
Sector	**2023**	**Aligned %**	**2023**	**Aligned %**	**Number of issuers**
Industrials	12.0	7%	54	6%	47
Government	10.1	96%	18	78%	9
Oil & Gas	8.3	0%	10	0%	7
Agri & Food	6.2	60%	17	35%	11
Communications	3.9	42%	9	33%	7
Health Care	3.5	0%	6	0%	3
Utilities	3.5	23%	12	8%	9
Consumer Discretionary	3.4	13%	11	27%	10
Technology	2.6	21%	11	9%	9
Financials	2.4	6%	26	4%	18
Materials	1.9	0%	7	0%	6
Cement	1.9	100%	4	100%	2
Real Estate	1.4	15%	15	7%	9
Airlines	1.1	100%	2	100%	1
Chemicals	0.9	0%	7	0%	6
Paper & Pulp	0.6	100%	2	100%	2
Energy	0.5	100%	1	100%	1
Renewable Energy	0.5	100%	1	100%	1
Steel	0.5	41%	4	50%	2
Shipping	0.2	24%	2	50%	2
Consumer Staples	0.2	0%	1	0%	1
Automotive	0.2	0%	5	0%	1
Grand Total	**65.8**	**35%**	**224**	**20%**	**161**

- Utilities was seventh in 2023 by amount issued but remains top by cumulative amount, largely driven by **Enel** (62%).

The Agri & Food sector has increased in prominence and achieved a relatively high share of 60% of aligned volumes in 2023, which perhaps underlines the increasing amount of sector-specific guidance (including from Climate Bonds).

Cement, steel, and chemicals are other hard-to-abate sectors where Climate Bonds Sector Criteria exist and exhibited different levels of alignment with the SLBDB in 2023: 100% from cement, 41% from steel, and 0% from chemicals. **HeidelbergCement** (USD1.6bn, two bonds), **Hesteel Group** (previously HBIS Group, USD277m, two bonds not aligned), and **Orbia** (USD598m, two bonds) were the largest 2023 issuers respectively.

Within financials, 18 out of the cumulative 35 issuers accessed the SLB market in 2023, the largest being **CPI Ronghe Financial Leasing** (USD384m, five deals not aligned due to two lacking GHG KPIs or targets, and three being private placements lacking disclosure).

The financials sector has a relatively low average bond and issuer size, which is due to smaller credit and leasing agencies, including several from China, within the range of issuers. Increasing issuance from large banks is crucial to reduce financed emissions, which could be achieved through sustainability-linked loan (SLLs). This should be the priority going forward and is likely to be supported by the increasing amount of guidance and tools targeting financial institutions.

EUR leads on currency

- **EUR accounted for 50% of volumes in 2023, slightly skewed towards aligned deals.** EUR represented over three times more than USD during the year with 50% of the cumulative amount also in EUR, nearly twice as much as USD.

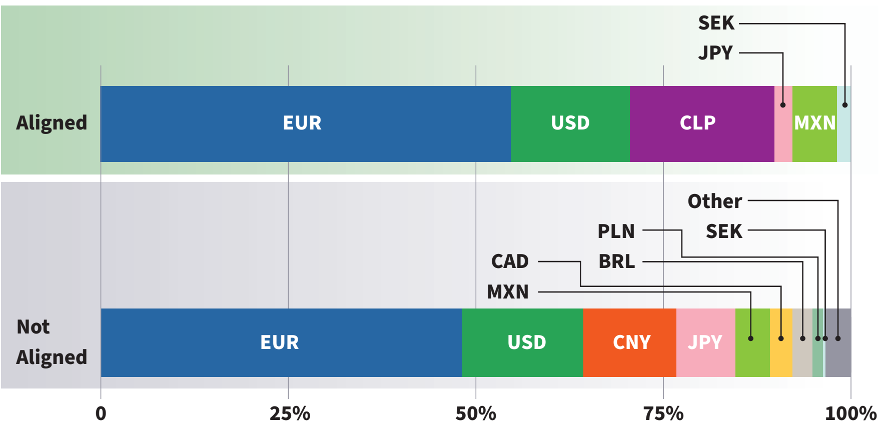
Most SLBs have a pre-issuance external review

- **Most of the market obtains external reviews pre-issuance, representing 86% cumulatively and a record-high 93% in 2023 by amount issued.** The results are lower by bond count (78% and 84% respectively), reflecting the fact that larger bonds and issuers are more likely to obtain a review, which applies to GSS bonds.

2023: Chile Government was the largest SLB issuer

Top 20 issuers (2023)	Amount issued (USDbn)	Number of bonds	Alignment summary (2023)
Chile Government	8.6	6	All bonds aligned
Eni SpA	4.0	3	No bonds aligned (excludes scope 3)
Enbridge Inc	2.6	2	No bonds aligned (excludes scope 3)
Teva Pharmaceutical Industries	2.5	4	No bonds aligned (excludes scope 3)
Autostrade per l'Italia SpA	1.6	2	No bonds aligned (uses economic intensity)
HeidelbergCement AG	1.6	2	All bonds aligned
Enel SPA	1.6	2	1 bond aligned, 1 not aligned (excludes scope 3)
Carrefour SA	1.4	2	1 bond aligned, 1 not aligned (scope 3 not in line with pathway)
TDC Net A/S	1.1	2	All bonds aligned
Air France-KLM	1.1	2	All bonds aligned
Vestas Wind Systems A/S	1.1	2	All bonds aligned
SK Hynix Inc	1.0	1	Not aligned (excludes scope 3)
Pilgrim's Pride Corp	1.0	1	Not aligned (excludes scope 3)
TELUS CORP	1.0	2	No bonds aligned (excludes scope 3)
REWE Group	1.0	1	Aligned
Fresenius SE & Co KGaA	0.9	1	Not aligned (lack of disclosure)
Schaeffler AG	0.9	1	Not aligned (excludes scope 3)
Grupo Bimbo SAB De CV	0.9	2	All bonds aligned
Auchan Holdings	0.8	1	Aligned
Legrand SA	0.8	1	Not aligned (lack of GHG KPIs/targets)

Debut SLBs in CLP, KRW, and RWF



Source: Climate Bonds Initiative

7. The sovereign GSS+ bond club

By the end of 2023, Climate Bonds had recorded cumulative aligned volume of sovereign GSS+ debt of USD486bn from 50 issuers. Among the issuing countries, 22 are classified as DM and 28 are EM. The green theme is the largest by aligned volume with USD386.7bn and Climate Bonds expects aligned sovereign GSS+ volume to pass the USD500bn mark in Q1 2024, reaching USD750bn by the end of the year.

Sovereign GSS+ bond market highlights 2023

- 33 countries priced GSS+ bonds amounting to USD158bn, representing an increase of 54% compared to the USD102.5bn priced by 25 countries in 2022.
- In November, Brazil became the 50th country to join the sovereign GSS+ bond club with its USD2bn sustainability deal. Beyond Brazil, four countries issued debut sovereign GSS+ deals: Sharjah, UAE priced one sustainability bond (USD1bn), Cyprus priced two (EUR1bn/USD1.1bn), India priced four green bonds (INR260bn/USD3.1bn) and Israel priced one green bond (USD2bn),
- In 2023, 76% of the volume came from the green theme, which was used by 20 nations in total. Eleven countries priced new deals for a combined total of USD61.5bn, and 14 nations tapped into existing deals amounting to USD58.1bn.

Europe leads on sovereigns

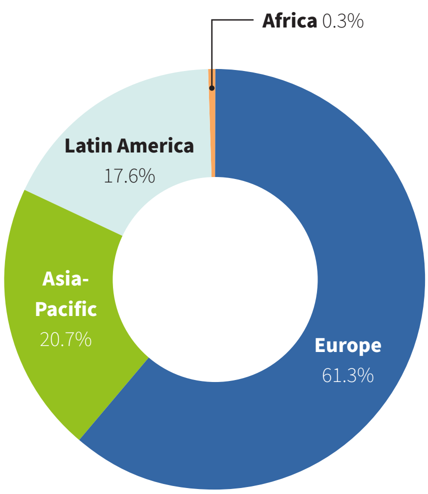
Overall, Europe is the largest source of aligned sovereign GSS+ debt, with cumulative volume of USD335.8bn from 22 countries. In 2023, 14 European countries contributed USD96.9bn, or 61% of the volume. France is the single largest sovereign GSS+ issuer and by the end of 2023, had three sovereign green bonds outstanding with cumulative volume of EUR61.9bn (USD69.5bn).

The LAC region is the second largest contributor overall, with nine countries having visited the market, raising cumulative volume of USD76.6bn. In 2023, seven LAC countries priced GSS+ deals for a total of USD27.9bn. The green theme was not deployed, and only Chile (one EUR deal and one USD deal priced in 2019, equal to 2020 with combined volume of USD7.4bn) and Colombia (one CLP deal in 2021 COP3.2tn/USD823bn) have priced aligned green bonds. Chile is still the only country to have priced deals in all four GSS+ themes. At the end of 2023, 46% of Chile's outstanding liabilities bore one of the GSS+ labels demonstrating strong policy action to support the country's sustainability ambitions.[23]

Sovereign scorecard

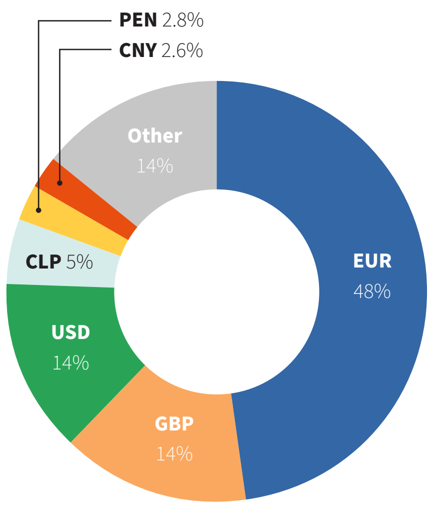
	Green	SLB	Social	Sustainability	All sovereign GSS+
Total market size (USDbn)	386.7	10.6	27	61.8	486
Number of issuers	32	1	5	23	50
Number of currencies	19	4	4	11	25
2023					
Market size (USDbn)	119.9	7.2	5.9	23.5	158
Number of issuers	20	1	2	13	33
Number of currencies	14	4	2	8	21

61% of aligned sovereign GSS+ volume originated in Europe



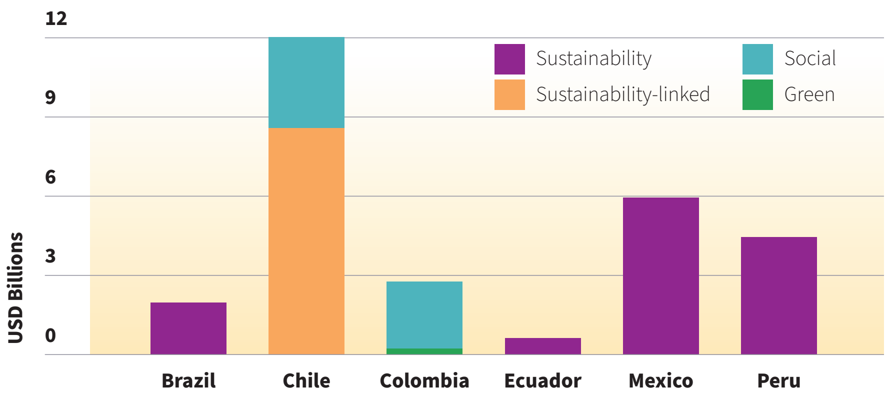
Source: Climate Bonds Initiative

3/4 of aligned 2023 GSS+ sovereign volume was priced in 3 currencies



Source: Climate Bonds Initiative

Six LAC sovereigns priced USD28.3bn of aligned GSS+ volume in 2023



Source: Climate Bonds Initiative

Egypt's Panda Bond

In October, Egypt diversified its financing sources with a CNY3.5bn (USD479m) sustainability Panda bond, the name given to CNY denominated bonds when they are sold by non-Chinese entities. In line with the Chinese preference for shorter-dated paper, the deal matures in 2026. Partial credit guarantees were provided by AfDB and the Asian Infrastructure Development Bank which both have AAA credit ratings, to support the deal and attract a broader range of investors. This is Egypt's second visit to the sovereign GSS+ market. In 2020 it priced a USD750m green bond with a five-year tenor.

In November 2022, Egypt hosted the 27th Conference of the Parties of the UNFCCC (COP27), during which it launched its Sovereign Sustainable Financing Framework, an update of its 2020 Green Bond Financing Framework.[24] The Framework includes provisions for Egypt to issue green, social, sustainability bonds, sukuk, or loans, and references blue and gender labels. This aligns with Egypt's Sustainable Development Strategy: Egypt Vision 2030 which reflects Egypt's ambitions in economic, social, and environmental development, and includes a roadmap for achieving the UN SDGs.

Eligible expenditures for UoP are categorised into twelve project categories. The environmental categories are Clean Transportation, Renewable Energy, Energy Efficiency, Adaptation, Pollution Prevention and Control, Sustainable Water and Wastewater Management, and Terrestrial and Aquatic Biodiversity Conservation. Social project categories are named as Affordable Basic Infrastructure, Access to Essential Services, Affordable Housing, Socioeconomic Advancement and Empowerment, Financing to Support Employment Generation and Alleviate Unemployment, and Food Security and Sustainable Food Systems.

25 currencies mobilised so far

Aligned sovereign GSS+ deals have been priced in 25 currencies so far. The EUR remains the most popular, taking 60% overall. In 2023, 21 currencies were used, of which three made up 75% of the volume priced. EUR was first with 50% of the total from ten European countries plus Hong Kong. GBP was used exclusively by the UK Debt Management Office (DMO) while USD took 12% of the volume and was used by ten countries of which Israel and Hong Kong were the only DM. CNY took the sixth largest share and was also deployed by Hong Kong for five deals (CNY25bn/USD3.6bn) along with Egypt (CNY3.5bn/USD479m).

Top 10 sources of GSS+ sovereign volume 2023

	USD bn	Theme
UK	22.5	Green
Germany	18.8	Green
Italy	15.0	Green
Hong Kong, China	14.4	Green
Austria	11.4	Green
Chile	11.3	Social, SLB
France	10.7	Green
Mexico	6.0	Sustainability
Netherlands	5.3	Green
Peru	4.5	Sustainability

Cultivating change: Germany's green bond strategy for climate resilient agriculture

In 2023, Germany priced aligned sovereign green bonds amounting to EUR17.3bn (USD18.8bn) which included the largest allocation to agriculture among the sovereign GSS+ debt issuers. Germany is the second largest issuer of sovereign GSS+ debt and between 2020 and the end of 2023, it had priced cumulative volume of EUR55.8bn (USD62.5bn).

In November 2016, the German government adopted its Climate Action Plan 2050, making it one of the first countries to submit a long-term GHG emission reduction strategy to the UN, as required under the Paris Agreement.[25] Germany's Climate Action Plan outlines the basic principles for implementing the country's climate change mitigation strategy to reach an 80% to 95% reduction in greenhouse gas emissions by 2050.[26]

Germany is in the process of overhauling its energy system, moving away from nuclear and fossil fuels towards renewable energy sources and enhancing energy efficiency. In 2022, half of Germany's sovereign green bond volume was earmarked for the maintenance and development of the transport sector, particularly its rail network, underscoring the government's efforts to make passenger and freight transport greener and more environmentally friendly. The federal government is providing investment subsidies for rail construction and expansion projects to electrify drive systems and rail routes.[27]

Up to 40% of Germany's 2023 UoP (EUR6.9bn/USD7.5bn) is earmarked for Land Use expenditures, supporting the development of forests, and organic and environmentally friendly farming practices. Its framework describes the eligible expenditures as low-carbon farming and grants that could be used for research and carbon storage. According to ISS ESG's SDG assessment, Germany's proceeds towards Agriculture, Forestry, Natural Landscapes, and Biodiversity contribute to UN SDGs 13 and 15.[28]

Germany's financing of agriculture is a model for other governments to follow, as sovereign nations can provide long-term financing to target the preservation of their land and the development of sustainable agriculture infrastructure. Moreover, sovereign green bonds can support grassroots-directed financing to facilitate more engagement across stakeholders in agriculture supply chains.

Issuers wishing to deploy GSS+ instruments to support UoP in agriculture should consider three objectives, and specify which activities will contribute to their achievement:

1. Deforestation-free processes,
2. Biodiversity protection,
3. GHG emission reduction, increased carbon sequestration, and enhanced adaptation and resilience.

Climate Bond's 2024 *Transition in action: Agri Food* report highlights how corporates of all sizes along the agri-food supply chain can use sustainable debt. The report describes how the latest international disclosure initiatives, and Climate Bonds Sector Criteria can be used for green and sustainable debt reporting and to inform the choice of sustainability-linked KPIs, giving examples of metrics beyond scope 3 GHG emissions. It also outlines what is happening on the banking side and the central role local banks can play in reaching farmers, making the transition inclusive, and alleviating poverty.

8. Adaptation and Resilience

Adaptation and Resilience bond market highlights 2023

- At the end of 2023, 1,222 of a total of 48,103 aligned GSS+ instruments, were recognised as having a portion of their UoP earmarked for Adaptation and Resilience (A&R) activities.
- In 2023, sovereign issuers referenced A&R-related projects most frequently, with 31% of the aligned instruments containing some element of A&R-related UoP. This was followed by non-financial corporates, financial corporates, and government-backed entities with 19%, 18%, and 17% of their deals referencing A&R respectively.
- 2023 marked a YOY drop of 21% in the number of deals that referenced A&R.
- The total count of countries remains consistent with the previous year, A&R activities being included in deals originating from 86 countries.

Adaptation and Resilience scorecard 2023

	Green	Social	Sustainability
Number of issuers	849	181	192
Number of instruments	7268	1797	1366
Number of countries	42	18	26
Number of currencies	26	20	17

GSS+ adaptation and resilience bonds YOY change

	2023	2022	% Change
Number of Issuers	1222	1546	-21
Number of Countries	86	86	0
Number of Currencies	63	66	-5

Obtaining the data for adaptation and resilience UoP

Climate Bonds databases capture bonds issued in green, social, and sustainability themes as well as SLBs. However, instruments in these themes bear a range of labels including transition, mitigation, adaptation, resilience, and more based on the UoP.

Climate Bonds uses the UoP as the primary criterion for identifying adaptation and resilience elements within each deal. For this report, a keyword search was conducted for terms related to adaptation and resilience to identify deals that incorporate these aspects (Appendix). This approach enabled Climate Bonds to extract data about deals that embed aspects of adaptation and resilience within their framework.

Sovereigns are the biggest contributors to A&R in 2023

United Kingdom

Instrument: Sovereign green bonds

2023 volume: USD22.5bn

UoP categories: (i) Clean Transportation; low and zero-emission mobility, including infrastructure and alternative fuels. (ii) Renewable Energy; development and support for renewable energy development such as wind solar and hydrogen and energy storage. (iii) Energy Efficiency; supporting schemes related to energy efficiency programmes including heating, retrofitting, and insulation. (iv) Pollution Prevention and Control; reduction of air emission and greenhouse gas (GHG) control, and waste prevention. (v) Living and Natural Resources; protection and enhancement of terrestrial and marine biodiversity, ecosystem and natural capital, and sustainable land use and protection. (vi) Climate Change and Adaptation; flood protection, resilience, and other risk mitigation projects.

The UK government is committed to enhancing the nation's climate resilience and has consequently allocated resources to initiatives such as its flood defence programme. This programme aims to safeguard flood-prone and coastal areas across England, offering protection amidst a shifting climate. Utilising nature-based solutions such as water storage areas is a key strategy, not only for flood prevention but also for enhancing biodiversity and supporting wildlife habitats.[29]

Chile

Instrument: Sovereign social bonds

2023 Volume: USD3.4bn

UoP Categories: (i) Clean Transportation; investment in public infrastructure and assets such as electrifying, extending, and renovating metro lines, electric buses and charging infrastructure, and clean public transportation. (ii) Energy Efficiency; investment in subsidies for the improvement of energy efficiency, improving public lighting. (iii) Renewable Energy; investment in projects from renewable non-fossil sources such as wind, solar, and hydro plants. (iv) Land Use; green expenditure including forestry and marine area protection. (v) Water Management; expenditure such as water distribution, wastewater management, water resource conservation, and flood defence systems to strengthen the resilience of the infrastructure in the event of severe weather conditions (vi) Green Buildings; construction and retrofit.

Chile has introduced several environmental policies and action plans to guide the achievement of its environmental objectives that in some cases have quantitative targets:

- **National strategy for climate change and vegetable resources.**
- **Adaptation targets:** To reduce the vulnerability associated with the risk of land degradation through the management of vegetational resources, involving at least 264,000 hectares directly between 2017–2025.[30]

- **National plan of adaptation to climate change.**
- **Climate change adaptation and mitigation plan for infrastructure services 2017–2022.**
- **Climate change adaptation plan for the forestry and the livestock sector.**
- **Plan for adaptation to climate change in biodiversity.**
- **Greenhouse gas mitigation plan for the energy sector.**

Mexico

Instrument: Sovereign sustainability bonds

2023 Volume: USD5.9bn

UoP categories: (i) Food Security; financing projects related to the price guarantee for basic food products programme. (ii) Healthcare Services; projects related to vaccination, free medical checkups, and medicines. Technological Development and Human Resource Training. (iii) Education; financing the public education system and physical educational infrastructure. (iv) Clean Water and Sanitation; expenditure on the national water commission for the development of infrastructure for clean and safe drinking water, sewerage, and sanitation, as well as the sustainable management of water resources. (v) Affordable and Clean Energy: projects related to sustainable use of energy and energy transition.

The strategy outlined by Mexico's national water commission for 2020–2025 focuses on mitigating floods and enhancing responses to climate-related incidents. This comprehensive programme entails the advancement of methodologies and technological platforms to bolster meteorological and hydrological forecasting capabilities. It also includes the formulation of emergency plans and procedures to address water-related hazards effectively. Additionally, investments are directed towards enhancing public hydraulic infrastructure assets and undertaking the rehabilitation and conservation of dams.[31]

9. Spotlight: Blue-labelled volume swells in 2023

Introduction

Climate Bonds research indicates that there was a 163% uptick in the use of the blue label for GSS+ bonds in 2023. The blue economy encompasses activities supporting the sustainable use of water, coastal, and marine resources while fostering livelihood improvement.[32] Estimates point to an investment opportunity of over USD3tn until 2050 for areas like the decarbonisation of marine transportation, protection of marine and coastal ecosystems, marine renewable energy, and sustainable aquaculture.[33]

Climate Bonds screens bonds bearing the blue label for its GBDB (environmental UoP) and SSBDB (social and environmental UoP) while SLBs from issuers with operations in the blue economy are eligible for inclusion in Climate Bonds SLBDB. For example, a blue bond focused solely on green projects such as Marine Renewable Energy, would be considered green-themed, whereas a blue bond including categories with inherent green and social characteristics, such as Sustainable Coastal and Marine Tourism, would be considered sustainability-themed.

Climate Bonds reinforces the need for blue bond issuers to follow the appropriate ICMA Principles according to the thematic nature of the stated UoP.[34]

Scope of the analysis

The methodological approach for this research consists of data analysis of GSS+ bonds recorded in Climate Bonds' three databases: GBDB, SSBDB, and SLBDB. Three different mapping exercises were done for this piece:

1. A mapping of all bonds in which issuers labelled their bonds explicitly with blue and water tags according to publicly available information recorded in the different Climate Bonds databases.

2. A mapping of bonds where Climate Bonds recorded Water as one of the bond's UoP categories;

3. A mapping of bonds meeting one of these three pre-defined criteria: bearing a blue or water label; or, having Water as one of its UoP categories as recorded in Climate Bonds' databases; or, having one keyword related to the blue economy in its UoP categories.[42]

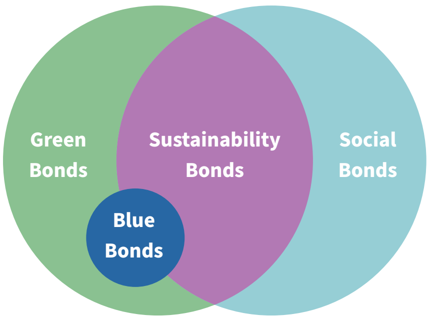
The results of the mappings demonstrate the potential of the blue label to expand within the current GSS+ market. The water label can be considered a subset of blue, and considered a blue label at the same time. Results show that several labelled debt instruments aside from blue and water bonds have already dedicated proceeds to projects and assets associated with different blue economy activities.

The exact total capital flows towards blue sectors are difficult to map accurately because issuers do not always report the specific allocation of proceeds to different project categories in advance. Moreover, Climate Bonds' databases do not track post-issuance allocations but record flat allocations (i.e., equal amounts in each category) unless relevant data is available when the instrument is issued. Therefore, the results of this mapping exercise represent a proxy and do not reflect the actual capital flows being directed to blue economy investments through GSS+ bond instruments.

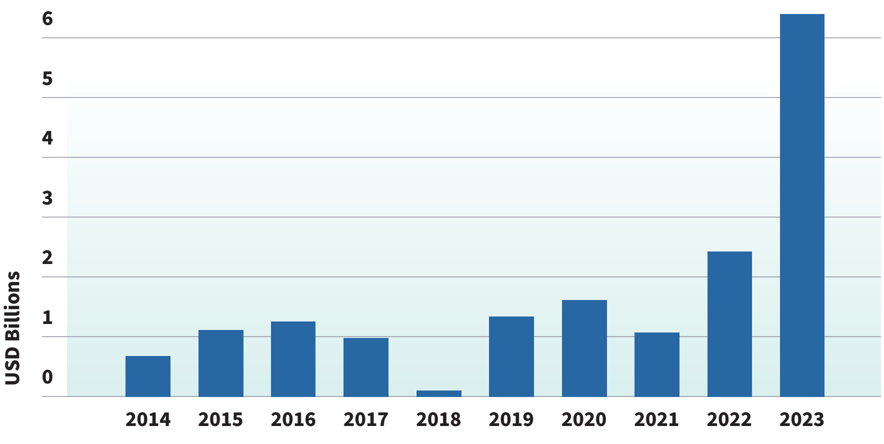
Disclosure and tagging practices must evolve before Climate Bonds can capture and track blue-related finance with a greater degree of accuracy in the global thematic debt market. Using blue and water labels while adopting best practices regarding disclosure and technical eligibility criteria for projects and assets will make it easier to gauge capital flows to the blue economy.

Blue bonds can be considered 'green' or 'sustainability', according to their UoP categories

(adapted from ICMA principles)



Blue and water labelled debt crosses the USD6bn mark in 2023, reaching USD17bn in cumulative volume



Source: Climate Bonds Initiative

The emergence of blue and water labels

The first water-labelled bond recorded in Climate Bonds' databases in 2014 was a EUR500m bond that matured in 2019, issued by the NWB Bank. NWB is a Dutch public bank that funds water and municipal authorities. Therefore, water bonds are an integral part of its operations, with most proceeds dedicated to adaptation efforts, such as flood protection, water management, and water quality activities.[35] Its most recent water bond, priced in April 2023, was a EUR1.5bn deal maturing in 2033, the largest single issuance in 2023 within the blue-water universe.

The blue label first appeared in 2018, on a USD15m sovereign bond from the Seychelles, part of a debt-for-nature swap transaction focused on raising funds for marine conservation, sustainable fisheries, and climate change adaptation.[36]

In 2023, Climate Bonds recorded aligned blue or water-labelled debt volume of nearly USD6.4bn, a 163% YOY increase. Cumulative aligned debt was around USD17bn by the end of 2023. Despite the 2023 surge, blue and water-labelled instruments still comprise less than 1% of the GSS+ debt market, signalling untapped potential akin to uncharted ocean depths. Such bonds offer expansive opportunities within global sustainable finance.

Numerous green and sustainability bonds, while not explicitly bearing a blue label, earmark proceeds for blue UoP. Climate Bonds mapping exercise revealed that GSS bonds mentioning blue economy keywords amounted to almost USD1.7tn. Considering a flat allocation for different UoP categories, an estimated 14.2% of this total amount (USD240bn) could flow into the water sector, a pivotal component of the blue economy.

The bulk of blue- and water-labelled bonds issued so far has originated from Europe (40%), Asia-Pacific (35%), and LAC (22%). Europe and Asia-Pacific are the regions with the largest shares of cumulative GSS+ debt, so their rankings are no surprise. However, it is noteworthy that the growing sustainable debt market in LAC seems receptive to using blue and water labels. Government-backed entities (39%) and non-financial corporates (23%) comprise the largest issuer types of blue debt. Such a distribution can be explained by the popularity of these labels among water and sanitation organisations, which can be backed either by governments or private corporations.

Regional blue horizons

In 2023, the largest amounts issued with blue labels came from the Asia-Pacific (USD1.95bn) and LAC (USD2.74bn), representing almost 70% of the total issued. Issuers have applied the blue label to their local contexts.

Brazilian water and sanitation companies champion the blue label

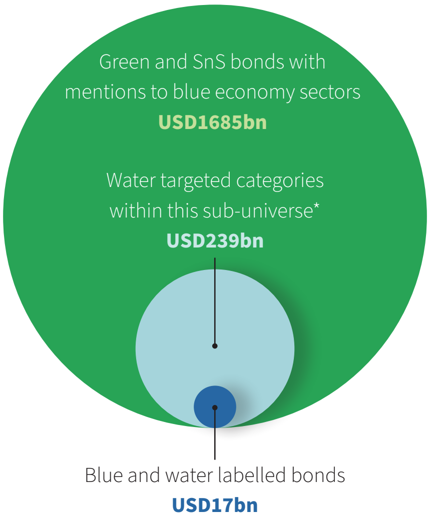
In 2020, Brazil approved a new sanitation framework. Approximately 15% of Brazilians still live without access to drinking water and almost 47% have no sewage collection or treatment. The new legislation established that by 2033, all Brazilian municipalities must provide drinking water services to 99% of the population, and sewage collection and treatment to at least 90% of residents.

In addition to establishing clear universalisation goals, the law aims to attract investment by offering full concessions for water and sanitation (W&S) services or forming public-private partnerships with regional providers. The annual investment required to meet the plan's goals within the proposed timeline are around USD9bn.[37] In 2023, four Brazilian W&S-focused entities issued sustainability bonds bearing the blue label.

1. Águas do Rio is a subsidiary of AEGEA, the largest private sanitation company in Brazil. In July 2023, it priced four bonds with a combined volume of USD1.16bn, maturing in 2034 and 2042. Beyond following the ICMA Principles, the entity's Sustainable and Sustainability-Linked Financing Framework also references the IFC Guidelines for Blue Finance to define eligible project categories.[38] The green project categories are Renewable Energy, Pollution Prevention and Control, Terrestrial and Aquatic Biodiversity Conservation, and Sustainable Water and Wastewater Management. Eligible social project categories are Affordable Basic Infrastructure and Socioeconomic Advancement and Empowerment. Águas do Rio's blue bonds demonstrate how the sustainable debt market can be deployed to support blue development through both environmental and social projects.

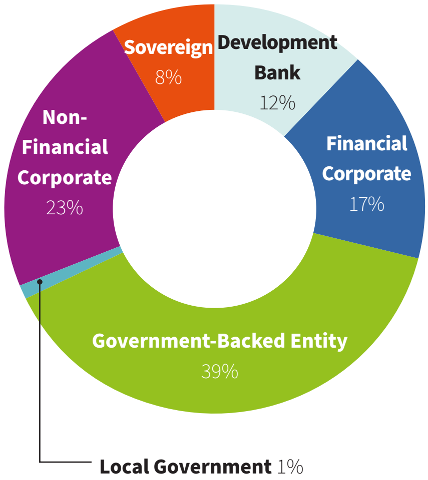
2. Sociedade de Abastecimento de Água e Saneamento (Sanasa) priced a BRL260m (USD54.8m) blue loan supported by the IFC in the context of the Utilities for Climate initiative.[39] The UoP is earmarked to support the expansion of water supply and sewage systems in the Brazilian city of Campinas.

Blue and water labels can be used more often by GSS+ issuers targeting blue sectors



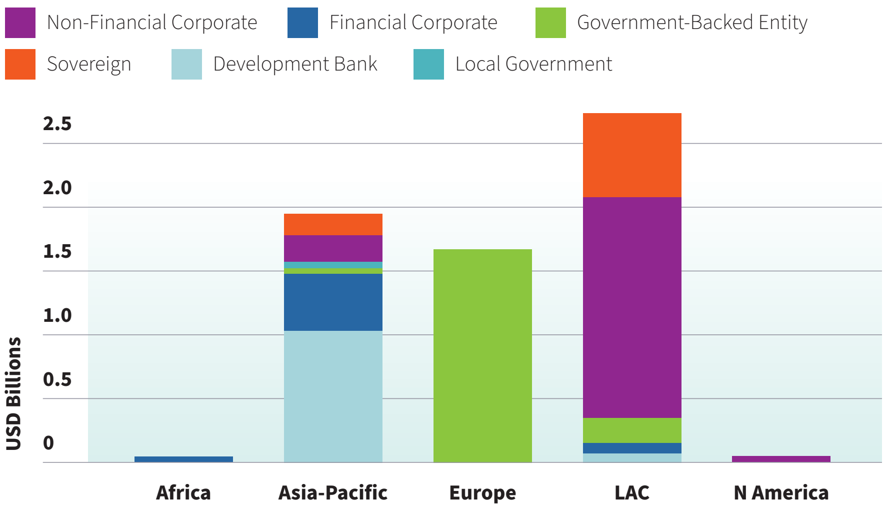
Source: Climate Bonds Initiative

Public sector issuers have priced the most blue and water labelled debt



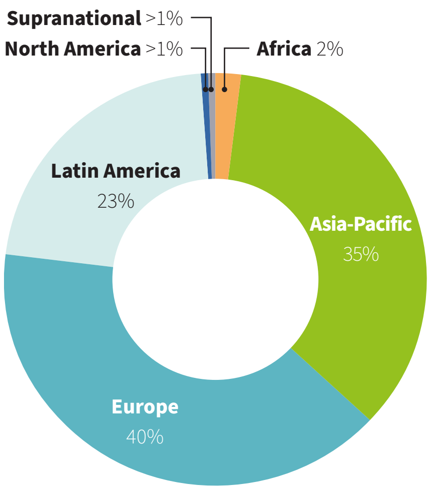
Source: Climate Bonds Initiative

In 2023, LAC issuers led on blue and water labels



Source: Climate Bonds Initiative

Europe is the largest source of cumulative blue and water labelled debt



Source: Climate Bonds Initiative

3. Cia De Saseamento do Paraná (Sanepar), the Paraná state-owned water and sewage company, priced a BRL1bn (USD200m) blue bond in July 2023. The UoP of the 3-year deal is earmarked to support Water, and Affordable Infrastructure.

4. Rio+ Saneamento issued a BRL2.5bn (USD514m) dual-tranche blue deal with UoP earmarked for Water and Sustainable Infrastructure.

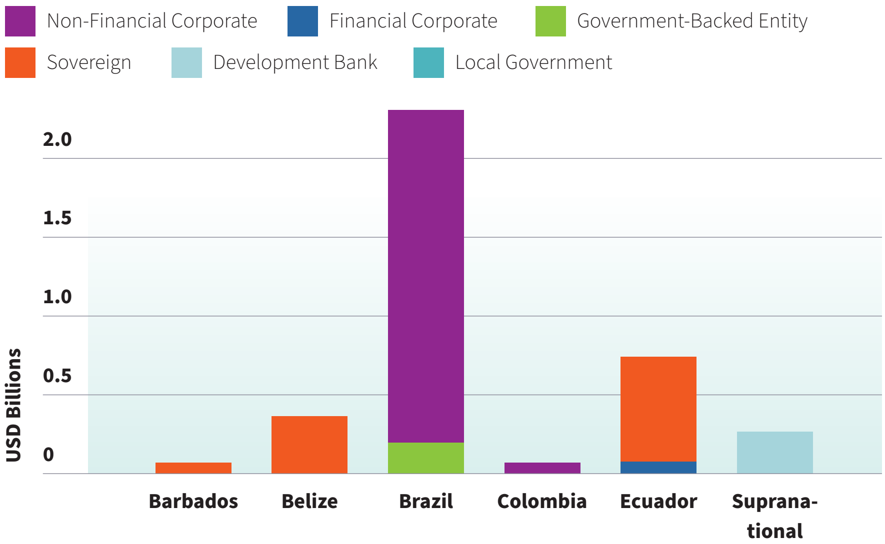
The four above-mentioned entities provide services to municipalities in states located in the southern part of Brazil, where access to W&S is more advanced compared to the northern regions. This highlights the difficulty of attracting blue finance to where it is most needed. Furthermore, Águas do Rio and Rio+ Saneamento are private corporations from Rio de Janeiro, a state that has privatised its state-owned water company through concession agreements. Sanepar and Sanasa are mixed corporates, majority-owned by municipal and state governments. This suggests that blue finance is a flexible solution to funding for a variety of strategies designed to achieve W&S goals.

The rising blue tide in Asia

The Asia-Pacific region is highly vulnerable to sea level rise, relies heavily on the blue economy, and plays a critical role in global marine biodiversity and trade.[40] The volume of aligned blue labelled GSS+ bonds originating from the region has reached approximately USD6bn with China leading. In 2023, Export-Import Bank of Korea (Eximbank) priced a USD1bn blue bond, the first from South Korea.

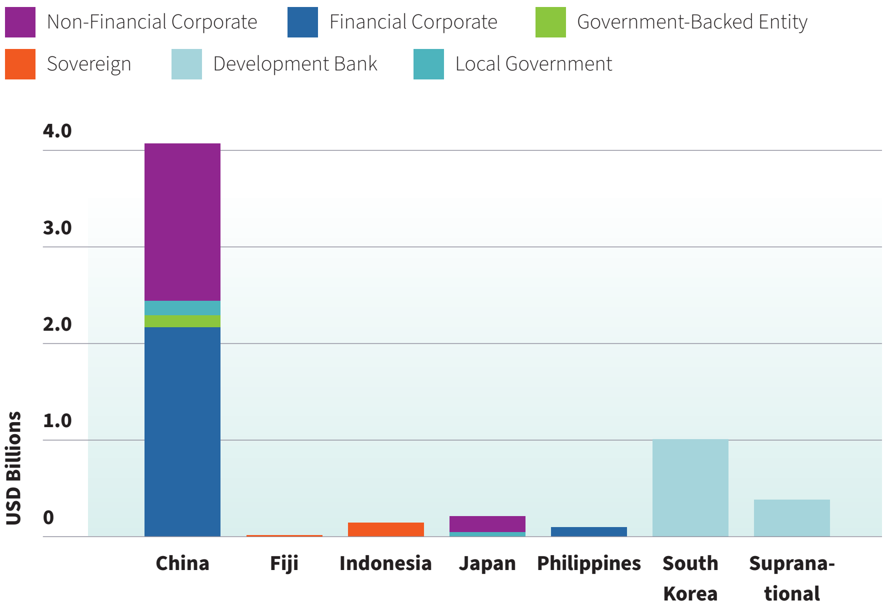
Eximbank is Korea's official export credit agency, responsible for financing export-import transactions, overseas investments, and natural-resource development. Eximbank's Sustainable Financing Framework included marine renewables, and sustainable water and wastewater management; the scope of which was extended to sustainable marine transportation and to prepare for the blue bond.[41]

Brazil lead LAC on aligned blue and water bonds



Source: Climate Bonds Initiative

China is the lead source of aligned blue bonds in the Asia-Pacific region



Source: Climate Bonds Initiative

10. Policy spotlight

Against the backdrop of a rapidly developing GSS+ debt market, policymakers globally must accelerate the scale of sustainable investment and harness it to meet their sustainable development needs.

Climate Bonds highlights three policy initiatives that can leverage the debt market to finance the transition

1. Plan for the transition

Strengthen transition planning to strengthen GSS+ issuance

Issuers of either UoP bonds or SLBs, should consider their transition, and the planning of it, coherently at the entity-level. This would facilitate a strategic approach to their financing needs as well as financing tools at their disposal to achieve their objectives. This will matter even more for transition financing, which is likely to attract more detailed scrutiny of what is financed and how it aligns with a credible transition pathway. From a market perspective, linking labelled bonds to a credible transition plan can provide additional confidence in the issuance, for sovereigns and private issuers alike. This is particularly valuable for SLBs and could address the lack of ambition seen in the majority of SLB deals.[43]

Japan's 2023 GX transformation plan demonstrates how sovereigns can articulate their transition plans coherently to then inform their transition bond framework, thereby strengthening the credibility of their issuance. The Japan's first GX bond, priced in early 2024, captures the opportunities of a global transition. It references the GX transformation plan, which details how USD130bn of public investment will leverage USD1tn of private investment to meet net zero by 2050. In addition, the plan's just transition measures focus on re-skilling and up-skilling the labour force to work in green growth areas.

Drive ambitious corporate transition planning, particularly n hard-to-abate sectors

The push for better transition planning is well underway. 2023 saw policymakers' attention turn to the issue. The Monetary Authority of Singapore set out supervisory expectations on transition planning for financial institutions.[44] The UK announced it will consult on expanding its transition plan disclosure requirements, and on mandatory transition planning.[45] When the Hong Kong Monetary Authority (HKMA) released its principles on planning for the transition to a net-zero economy, requiring banks to establish Paris-aligned targets, it also called for increased transparency over transition planning, suggesting their future inclusion in disclosure requirements.[46]

Disclosure requirements are one part of the puzzle. Policymakers should also provide guidance and capacity on what is a credible transition plan, particularly for hard-to-abate sectors which will require transformative planning.[47] In certain jurisdictions, mandating transition plan implementation and CAPEX planning will accelerate change, however this will depend on the capabilities of the private sector, interaction with existing regulation, and wider policy support for transition. In key hard-to-abate sectors, CAPEX planning is key to avoid embedding future emissions. In China, for example, 78% of existing coal-based blast furnaces capacity need reinvestment by 2030.[48] At the same time, 39% of new coal-based blast furnaces being developed globally are in China and this corresponds to a capacity of around 147 Mt per year. From a risk perspective, this is estimated to be a stranded asset risk of USD147-222bn.[49] Transition policies will require granular guidance per sector, providing clarity on availability and eligibility of any subsidies for example, accelerated depreciation, and other supportive policies.

Incorporate just transition in all policies

The fundamental economic shifts that are needed to achieve the objectives of the Paris Agreements require political and social buy-in to be designed and implemented. 2023 saw social unrest in response to transition policies across the world, from the farmer protests in the EU to protests over copper mining licensing in Panama. Such unrest raises key questions over the redistributive and social impacts of transition policies. Ultimately, failing to address the significant political economy challenges of the transition, especially in hard-to-abate sectors such as agriculture or critical minerals, threatens the likelihood of success of policy design and implementation and therefore speed of transition.

Including just transition measures in transition planning ensures that existing inequalities are not exacerbated, enables equal access to transition policy design and opportunities, and ensures the social buy-in that is a necessary condition for an early and orderly transition. Just transition measures are relevant for all issuing entities.

At COP28, Climate Bonds, together with the LSE Grantham Institute, released Mobilising global debt markets for a just transition, demonstrating the vast potential of the GSS+ bond market to finance a just transition. Despite the lack of necessary market infrastructure to support the financing of just transition at scale (such as agreed upon definitions and best practices), Climate Bonds' research shows that 13% of cumulative aligned GSS+ volume had just transition characteristics.[50]

Green trade policies to trigger decarbonisation

Carbon Border Adjustment Mechanisms can have an outsize impact on global decarbonisation

The EU's Carbon Border Adjustment Mechanism (CBAM) came into force on 1st October 2023 in its reporting-based transitional phase and is a significant step towards improving European carbon pricing policy, allowing for the phase-out of Emissions Trading System free allowances.[51] By placing a levy on certain carbon-intensive goods (such as steel and cement), and hence equalising the price of carbon paid for EU products and the one for imported goods, the CBAM aspires to build a green level playing field. Financial adjustments will be gradually phased in from 2026, and fully in 2034.

The CBAM can be a key lever to trigger decarbonisation well beyond the EU's borders. Indeed, should EU importers demonstrate that they have already paid a carbon price to produce those goods in a non-EU country, this amount would be deducted, providing an incentive to decarbonise outside the EU and for their nations to implement a carbon tax. This presents opportunities for transition and green-first growth in many trade partners' economies, by anchoring demand for low-carbon products and hence reducing uncertainty for investment.

In addition, the revenues generated by the CBAM could be utilised to accelerate the net-zero transition as well as to support most impacted EM countries and further encourage global decarbonisation.

As jurisdictions look to prevent carbon leakage and trade disadvantage as they implement or increase carbon prices, CBAMs are expected to be implemented in more jurisdictions in the coming years: the UK is expected to implement a CBAM by 2027 and other countries like Canada are considering similar schemes. In implementing CBAMs, countries should consider how their policy design can best create green growth opportunities for trading partners, especially in emerging market developing economies and lower middle income countries and how the use of revenues generated can best be used to support this.

Green export credit guarantees could accelerate global transition

Greening trade facilitation, especially export credit guarantees, is an important lever to further encourage decarbonisation. Between 2006–2022 Export Credit Agencies (ECAs) have provided more financing to the energy sector than the multilateral financial institutions, with an average of USD40bn provided per year. This financing has been predominantly allocated to fossil fuels projects. In addition, with their status as lenders of last resort, ECAs hold potential to shift huge levels of finance towards green projects.[52]

Some countries are leading the way, and change is afoot. In July 2023, Germany announced it is tilting its export credit guarantees to provide better coverage to green projects, i.e., those that meet the EU Taxonomy thresholds, while preventing support for nearly all new fossil fuel projects.[53] The German ECA provided over EUR100bn in support for German exporters in 2022, more than any other agency globally.[54] COP28 saw the launch of the Net-Zero Export Credit Agencies Alliance, with Canadian, Danish, Swedish, and UK ECAs committing to 1.5°C-alignment, and to phase out new support for unabated fossil fuel projects by the end of 2024.[55]

Most ECAs, especially large ones, are in G20 countries with credible climate objectives. Greening ECA financing will support green domestic industries, creating a win-win between trade policy and climate policies.

3. Increase access to capital for green investments

Leverage central banks to encourage green lending

Climate change presents risk to financial stability, and hence climate-related financial risk is a key concern to central banks. Central banks cannot be the driver of climate policy but depending on a central bank's specific mandate and macro-economic circumstances, they have a key role to play in supporting the transition.

Currently, at about USD30bn/year globally, green lending growth significantly lags green debt markets growth. Shifting lending to green will both accelerate real economy transition and insulate banks from significant losses linked to climate-related financial risks. Central banks can establish discounted lending facilities for green projects and assets that banks can pass on to their customers as green loans and mortgages. Such green financing facilities have been successfully established by the Bank of Japan and People's Bank of China, for example.[56,57] Other examples of encouraging green lending include the Reserve bank of India and the Bangladesh Bank that have introduced green credit guidance.[58] Where relevant and appropriate within existing capital adequacy frameworks, central banks can also tilt capital requirements, as done by Hungary's central bank for green mortgages, based on lower default risk for such mortgages.[59]

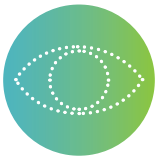
In terms of green central banks' own portfolios, in February 2023, the ECB announced stronger measures to decarbonise its corporate bond holdings. As it reduces the size of its asset purchase programme portfolio, reinvestment will be tilted towards issuers with stronger climate performance.[60]

Multilateral development banks can and should do more

The multilateral development bank (MDB) Joint Principles for Assessing Paris Alignment demonstrate the importance of a harmonised approach to transition. The World Bank and nine other MDBs have developed common principles to facilitate the Paris Alignment assessments of their new financing operations.[61] These provide transparency and clarity to project developers on how to qualify for green financing. They can also inform DFI and NDB assessments, accelerating their roll out of green financing. Indeed, DFIs such as COFIDES and IFU have already picked up the principles.

In addition to greening their balance sheets, MDBs and DFIs need to increase efforts to crowd in private finance for green. Public finance alone cannot bridge the USD6tn climate investment gap. Climate Bonds analysis finds that only around 30% of European DFIs have any form of capital mobilisation target in place. Prioritising private capital mobilisation and implementing replicable mechanisms such as standardised blended finance facilities could rapidly increase the flow of capital to green projects.

11. Outlook



Aligned GSS+ volume had reached USD4.4tn by the end of 2023 and Climate Bonds expects the market to break through the USD5tn mark by mid-2024. There is still enormous untapped potential for this market, with aligned 2023 figures representing 4% of a growing global debt market, and supply and demand imbalances persisting in the primary markets. The gap between the USD5.5tn issued to date, and the USD4.4tn meeting the requirements of Climate Bonds Database Methodologies suggests there is an opportunity for issuers to be more ambitious and embrace greater rigour in their planning and disclosure.

The green bond market continues to thrive with labels such as blue and transition gaining momentum and adding to the diversity of the investible opportunity set. The leadership being shown by sovereign issuers through new and repeat issuance is guiding the growth of GSS+ markets around the globe raising the profile of decarbonisation plans and encouraging crowding in from the private sector.

Around half of all debt issuing nations have now mobilised the GSS+ market which suggests that governments are prioritising expenditures with green and social purpose. Social and sustainability labels have been used to support inclusive, sustainable growth, contributing to a just transition, andthe success of these labels in EM has shown the influence that policy support can have on market growth. SLBs are the smallest segment of the GSS+ market and show potential for scale as more issuers begin to reference credible transition plans in their selection of KPIs and SPTs, and uplift the quality of the market.

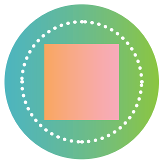
The focus is now on robust transition planning. Climate Bonds expects the following themes to propel the GSS+ market in 2024:

1. The transition label fosters inclusivity. Climate Bonds expects to see rapid growth of bonds bearing the transition label from Asia and the USA, as greater clarity emerges around eligible UoP from standard setters, national taxonomies, and inspired by the success of the Japanese sovereign deal. Climate Bonds assesses bonds bearing the transition label for inclusion in its green or sustainability databases according to the eligible project categories.

2. Governments must lead on transition planning. Clear transition plans help to prioritise green development, and national sectoral decarbonisation pathways bring transparency to climate transition spending. At the government level, this will provide a roadmap for each government to access the finance needed to meet its NDCs, with a focus on exploiting the opportunities posed by the global green revolution.

3. Sustainability-linked bonds can be scaled. The 2023 growth in aligned SLBs points to potential to scale this market. Issuers including those operating in hard-to-abate sectors such as steel and cement, can leverage the opportunity to connect their liabilities to their sustainability objectives, beginning with a robust transition plan. This transition plan should be used as a reference to select material KPIs and SPTs to lend credibility to SLBs. Climate Bonds and others offer guidance to support issuers in the development of credible transition plans.

4. Oil and gas companies light up the market. Transition encompasses a broader range of GHGs beyond CO_2. The IPCC has shown that addressing methane leakage is an urgent and immediate challenge to meeting greenhouse gas emission reduction requirements. Work is underway to define gas sector methane abatement investments that are consistent with net-zero pathways to support 1.5°C targets. Subject to investor confidence in the 1.5°C credentials of this work, this has the potential to open a new area of thematic issuance among national oil and gas companies.



5. Resilience integrated into transition. Incorporating resilience into transition planning involves integrating climate considerations into development planning processes and prioritising actions that build societal resilience over time. Climate Bonds expects to publish a resilience taxonomy in 2024 which will enable a convergence between the social and green themes, as green issuers find many social expenditures become eligible for their larger green programmes This will support further growth in the sovereign GSS+ market.

Appendix

Scope of analysis

This report includes four sustainable debt themes based on the projects, activities, and expenditures financed: green, social, sustainability, and SLB. The GSS+ themes can be described as follows:

Green: dedicated environmental benefits (captured since 2012).

Social: dedicated social benefits (captured since 2020).

Sustainability: green and social benefits combined into one instrument (captured since 2020).

SLB: changes in coupon (almost always step-ups) linked the fulfilment of key performance indicators (KPIs) against entity level sustainability performance targets (SPTs) (captured since 2021).

Transition bonds

Historically, Climate Bonds recorded but did not screen bonds bearing the transition label. As of January 2024, Climate Bonds stopped reporting transition bonds as a separate category but regards them as a sub-set of the green label. Climate Bonds now adds such bonds to the Climate Bonds Green Bond Database, and screens them against its Green Bond Dataset Methodology.[63]

Green, social, and sustainability bonds	Aligned	Pending	Excluded
Cumulative USD billion as of 31 December 2023	4.4tn	79.8bn	751.7bn

SLBs	Fully aligned	Strongly aligned	Aligning	Not aligned
Cumulative USD billion as of 31 December 2023	40.3bn	2.2bn	4.7bn	278.9bn

Methodology overview

This report draws on three Climate Bonds databases:

1. Green Bond Database (GBDB)

2. Social and Sustainability Bond Database (SSBDB)

3. SLB Database (SLBDB)

Bonds meeting the requirements outlined in Climate Bonds' screening methodology qualify for inclusion in the datasbases and are classified as aligned. Labelled bonds for which there is not enough information to determine eligibility for database inclusion are classified as pending until sufficient disclosure is available to decide. Bonds failing to meet the requirements of Climate Bonds' screening methodology are classified as non-aligned and are excluded from the databases.

Green, social, and sustainability bonds captured by Climate Bonds meeting the requirements outlined in its screening methodology qualify for inclusion in the databases and are classified as aligned. Labelled bonds for which there is not enough information to determine eligibility for database inclusion are classified as pending until sufficient disclosure is available to decide. Bonds failing to meet the requirements of Climate Bonds' screening methodology are classified as non-aligned and are excluded from the databases.

SLBs are assessed according to Climate Bonds Sustainability-Linked Bond Database Methodology (SLBDB Methodology) and classified according to four levels of alignment.[62]

1. Fully aligned: SLB targets cover all material sources of emissions and are aligned with the relevant pathway.

2. Strongly aligned: SLB targets cover all material sources of emissions and will be aligned with the relevant pathway by 2030.

3. Aligning: SLB targets cover all material sources of emissions, are aligned with the pathway on a % reduction basis, and the issuer has the basic tenets of a transition plan.

4. Not aligned: SLB targets fail to meet any of the above criteria, or do not meet the other requirements detailed in the SLBDB Methodology.

As Criteria are developed, Climate Bonds will update its GBDB methodology and then begin screening bonds from issuers in those sectors for inclusion, whether labelled as transition or as green. The Climate Bonds Taxonomy defines the assets and activities that are aligned with a 1.5-degree pathway, accepting financing with either label. In 2024, Climate Bonds will publish new sector Criteria for Electrical Utilities, Agri-food, Deforestation and Conversion-Free Sourcing, Hydrogen Delivery and Production, and Basic Chemicals. Climate Bonds Buildings Criteria will also be updated to reflect the differences between new and existing buildings.

Adaptation and Resilience

Sector	Keywords/Terms
General A&R terms	Adaptation Resilience AnR A&R Adaptive Resilient Climate risk Exposure Hardening Hazard Climate proofing Vulnerability Redundancy Redundant TCFD
Social resilience and well-being	Social protection Welfare Livelihoods Disease surveillance systems E-Health Rapid diagnostic tests
Disaster risk management and insurance	Early warning system Weather monitoring Weather forecast Flood forecasting Drought monitoring Climate monitoring Climate modelling Relocation Managed retreat Climate Information System Parametric insurance Index insurance Catastrophe insurance
Water	Drinking water Stormwater drainage Water treatment Water loss reduction Water conservation Hydro-meteorological monitoring Rainwater harvesting Wastewater treatment Desalination Flood control Irrigation efficiency Leakage management Water efficiency Wetland degradation

Sector	Keywords/Terms
Energy	Distributed Generation Distributed PV Microgrids Minigrids Energy Storage Underground cabling Structural Strengthening
Agriculture, forestry, land use, and natural resource management	Soil conservation Climate-smart agriculture Agricultural insurance Climate-resilient rural infrastructure Drought resistant crops Non-perennial crops Regenerative agriculture Soil sequestration Wild brush clearing Species diversification Afforestation Reforestation Mangrove conservation and replanting Restoration of natural habitats Pest control measures Regeneration or extension of natural forests Sustainable aquaculture Ecosystem-based adaptation Integrated water resources management Ecosystem Services Soil Erosion Biodiversity Evapotranspiration Land degradation

Sector	Keywords/Terms
Infrastructure and built environment	Green roofs and walls Water retention gardens Porous pavements Reduce urban heat zones Grid resilience Back-up generation and storage Increased cooling requirement Urban flood protection Climate-resilient urban infrastructure Resilient shelters Natural infrastructure Green infrastructure Natural assets Wildlife buffer zone
Coasts	Coastal natural buffer zones Flood warning systems Coastal Setbacks Managed realignment Flood shelter Cyclone shelter Slope management Coastal protection Wetland protection Marine protected area Artificial reef
Industry	Supply chain resilience Business continuity planning Climate-related physical risk assessment Climate-related transition risk assessment

List of acronyms

A&R: Adaptation and resilience
ABS: Asset-backed securities
AFFLU: Agriculture, forestry, food, and land use
CBS: Climate Bonds Standard
CBS v4: Climate Bonds Standard V4
DM: Developed market
EM: Emerging market
ESG: Environmental, social, and governance
EU: European Union
GBDB: Green Bond Database
GBP: ICMA's Green Bond Principles
GHG: Greenhouse gas
GSS: Green, social and sustainability
GSS+: GSS and SLB bonds
KPI: Key performance indicator
LAC: Latin America and Caribbean
MDB: Multilateral development bank
S&S: Social and sustainability
SME: Small and medium-sized enterprise
SSBDB: Social and Sustainability Bond Database
SBP: ICMA's Social Bond Principles
SDG: Sustainable development goal
SLB: Sustainability-linked bond
SLL: Sustainability-linked loan
SNAT: Supranational
SPT: Sustainability performance target
UoP: Use of proceeds
YOY: Year-on-year

Endnotes

1. China’s property downturn.
2. “Green Bonds – Made by KfW” Framework 2024. KfW. Retrieved from https://www.kfw.de/PDF/Investor-Relations/PDF-Dokumente-Green-Bonds/20231206-KfW-Green-Bond-Framework.pdf.
3. Environmental Finance. KfW adds biodiversity as it launches €13bn green bond programme for 2024. Retrieved from https://www.environmental-finance.com/content/news/kfw-adds-biodiversity-as-it-launches-13bn-green-bond-programme-for-2024.html.
4. Second-Party Opinion: Green Bonds – Made by KfW Framework. Morningstar Sustainalytics. Retrieved from https://www.kfw.de/PDF/Investor-Relations/PDF-Dokumente-Green-Bonds/SPO-Sustainalytics-Framework-2024.pdf.
5. Description on Bank of China Limited, Luxembourg Branch’s Transition Bond. Bank of China. Retrieved from https://pic.bankofchina.com/bocappd/Luxembourg/202310/P020231011305410346850.pdf.
6. https://www.environmental-finance.com/content/the-green-bond-hub/taking-the-pulse-of-the-sustainable-bond-market.html
7. UNEP-WCMC. (2016). The State of Biodiversity in Latin America and the Caribbean: A mid-term review of progress towards the Aichi Biodiversity Targets. United Nations Environment Programme (UNEP). https://www.cbd.int/gbo/gbo4/outlook-grulac-en.pdf
8. Inter-American Development Bank. (2024). The complexities of inequality in Latin America and the Caribbean. Accessed in March 2024 <https://www.iadb.org/en/news/complexities-inequality-latin-america-and-caribbean>
9. Robins N, Curran B, Plyska O, Burge L and Van Coppenolle M. (2023). Mobilising global debt markets for a just transition. London: Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science. Accessed in March 2024 https://www.lse.ac.uk/granthaminstitute/publication/mobilising-global-debt-markets-for-a-just-transition/
10. Comisión Federal de Electricidad Sustainable Financing Framwork, January 2022, CFE_ Sustainable Financing Framework.pdf
11. https://www.environmental-finance.com/content/awards/environmental-finances-bond-awards-2023/winners/sustainability-bond-of-the-year-sovereign-mexico.html
12. Concept | ESG | Investor Center | 한국주택금융공사 영문 (hf.go.kr)
13. khfc-social-bond-spo-09072018-final.pdf (mstar-sustops-cdn-mainwebsite-s3.s3.amazonaws.com)
14. https://www.gsam.com/content/gsam/uk/en/advisers/market-insights/gsam-insights/2024/social-bonds-bounce-back.html#:~:text=South%20Korea%20is%20the%20third,to%20finance%20affordable%20housing%20projects.
15. https://www.disruptionbanking.com/2024/01/08/how-strong-will-the-korean-won-krw-be-in-2024/#:~:text=Indeed%2C%20economists%20at%20the%20Japanese,the%20end%20of%20the%20year.
16. Second Party Opinions - Kestrel (kestrelesg.com)
17. Climate Bonds Initiative, March 2024, Sustainability-Linked Bonds: Building a High-Quality Market. https://www.climatebonds.net/resources/reports/sustainability-linked-bonds-building-high-quality-market
18. Partial emission scope coverage is even slightly higher in reality due to the funnel approach described.
19. Compared to other reasons, lacking GHG targets is less a ‘fault’ of issuers than a current limitation of the SLBDB Methodology, which currently only screens bonds from the perspective of climate mitigation. On the other hand, climate impacts are material for virtually all companies, so while Climate Bonds may not advocate that every SLB should have climate mitigation KPIs/targets, all issuers should have at least one outstanding SLB containing this.
20. EM includes frontier markets.
21. Total number of issuers is lower than adding individual issuer counts as some repeat issuers have SLBs with different alignment levels.
22. Development Bank of Rwanda, September 2023, Investor Presentation. https://www.brd.rw/wp-content/uploads/2023/09/SLB-Investor-Presentation.pdf
23. According to Bloomberg, sovereign debt with country of risk = Chile was USD101.3bn at the end of 2023
24. Egypt Sovereign Sustainable Financing Framework, November 2022. Egypt Sovereign Sustainable Financing Framework_vF (mof.gov.eg)
25. SECOND PARTY OPINION Sustainability Quality of the Issuer and the Green German Federal Securities (Grüne Bundeswertpapiere) (deutsche-finanzagentur.de)
26. SECOND PARTY OPINION Sustainability Quality of the Issuer and the Green German Federal Securities (Grüne Bundeswertpapiere) (deutsche-finanzagentur.de)
27. Green bond allocation report 2022 (bundesfinanzministerium.de)
28. SECOND PARTY OPINION Sustainability Quality of the Issuer and the Green German Federal Securities (Grüne Bundeswertpapiere) (bundesfinanzministerium.de)
29. United Kingdom, Green Bond Framework: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1002578/20210630_UK_Government_Green_Financing_Framework.pdf
30. Chile sustainability linked bond framework: https://www.hacienda.cl/english/work-areas/international-finance/public-debt-office/esg-bonds/sustainability-linked-bonds/second-party-opinion-sustainalytics-2023-
31. Mexico second party oninion: https://assets.website-files.com/5df9172583d7eec04960799a/624d5e197a0eeb5d6a904d94_20210702_SPO_VE_Mexico_Final.pdf
32. Definition based on 1) International Finance Corporation. (2022). Guidelines for Blue Finance. International Finance Corporation. https://www.ifc.org/en/insights-reports/2022/guidelines-for-blue-finance & 2) Asian Development Bank. (2023). Bonds to Finance the Sustainable Blue Economy: A Practitioner’s Guide. Asian Development Bank (ADB), International Capital Market Association (ICMA), International Finance Corporation (IFC), United Nations Global Compact (UN Global Compact), United Nations Environment Programme Finance Initiative (UNEP FI). https://doi.org/10.22617/TCS230328-2
33. Institute for Sustainable Investing, Morgan Stanley. (2023, April). 4 Ways to Invest in a Sustainable Blue Economy. https://www.morganstanley.com/ideas/blue-economy-investing-ocean-priorities
34. ICMA. (2021). Green Bond Principles—Voluntary Process Guidelines for Issuing Green Bonds; ICMA. (2023). Social Bond Principles—Voluntary Process Guidelines for Issuing Social Bonds; ICMA. (2021). Sustainability Bond Guidelines; ICMA. (2023). Sustainability-Linked Bond Principles—Voluntary Process Guidelines.
35. NWB Bank Investor Relations website: https://nwbbank.com/en/investor-relations/water-bonds (accessed in February 2024)
36. World Bank press release: https://www.worldbank.org/en/news/press-release/2018/10/29/seychelles-launches-worlds-first-sovereign-blue-bond (accessed in February 2024)
37. Instituto Trata Brasil. (2023). Avanços do Novo Marco Legal do Saneamento Básico no Brasil – 2023 (SNIS 2021). Instituto Trata Brasil, Associação Brasileira dos Fabricantes de Materiais para Saneamento (ASFAMAS), GO Associados. https://tratabrasil.org.br/avancos-do-novo-marco-legal-do-saneamento-basico-no-brasil-2023-snis-2021/
38. https://www.ifc.org/en/insights-reports/2022/guidelines-for-blue-finance
39. https://pressroom.ifc.org/all/pages/PressDetail.aspx?ID=27681
40. Tameo Impact Fund Solutions, Sasakawa Peace Foundation. (2023). Financing the Blue Economy in Asia. https://www.adb.org/sites/default/files/publication/806136/financing-blue-economy.pdf
41. Korea Export-Import Bank website: https://www.koreaexim.go.kr/he/HPHEOM009M01 (accessed in February 2024).
42. List of keywords used: aquaculture, aquatic, boat, blue, coastal, fisheries, marine, ocean, offshore, port, ports, sewage, shipping, ship, wastewater, water.
43. https://www.climatebonds.net/resources/reports/sustainability-linked-bonds-building-high-quality-market
44. https://www.mas.gov.sg/news/media-releases/2023/mas-proposes-guidelines-for-financial-institutions-on-transition-planning
45. https://www.gov.uk/government/publications/green-finance-strategy
46. https://www.hkma.gov.hk/media/eng/doc/key-information/guidelines-and-circular/2023/20230829e1.pdf
47. https://www.climatebonds.net/transition-finance/fin-credible-transitions
48. Global Steel Transformation Tracker (agora-industry.org)
49. Pedal to the Metal 2023 (globalenergymonitor.org)
50. https://www.lse.ac.uk/granthaminstitute/publication/mobilising-global-debt-markets-for-a-just-transition/
51. Carbon Border Adjustment Mechanism - European Commission (europa.eu)
52. https://www.tandfonline.com/doi/full/10.1080/09692290.2023.2272845
53. https://www.bmwk.de/Redaktion/EN/Pressemitteilung en/2023/07/20230724-sectoral-guidelines-for-export-credit-guarantees-to-better-serve-climate-policy.html
54. https://www.germanwatch.org/en/89618
55. https://www.unepfi.org/climate-change/net-zero-export-credit-agencies/
56. https://greencentralbanking.com/2022/05/05/pboc-climate-lending-facility-china/
57. https://greencentralbanking.com/2022/01/20/japan-green-loans-scheme/
58. Burge, L., 2023. 101 sustainable finance policies for 1.5°C, Climate Bonds Initiative
59. Burge, L., 2023. 101 sustainable finance policies for 1.5°C, Climate Bonds Initiative
60. https://www.ecb.europa.eu/press/pr/date/2023/html/ecb.pr230202~1a4ecbe398.en.html
61. https://www.worldbank.org/en/publication/paris-alignment/joint-mdb-paris-alignment-approach
62. Climate Bonds SLB Database Methodology, Sustainability-Linked Bond Database Methodology | Climate Bonds Initiative
63. Climate Bonds Initiative Green Bond Database Methodology, Green Bond Database Methodology | Climate Bonds Initiative

Climate Bonds INITIATIVE

Lead Authors: Neeraj Chouhan, Caroline Harrison, Deepak Sharma

Contributors: Miguel Almeida, Mike Brown, Lily Burge, Daniel Costa, Ang Gao

Editorial support: Stephanie Edghill

Design: Godfrey Design, Joel Milstead,