



IENE Briefing Note No.17



Sustainable Financing Through Green Bonds

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Prepared by IENE's Research Team

IENE Briefing Notes

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Global Green Bond Activity (2021, Q3 2022 and 2022)

2021 Global Green Bond Market Overview¹

Based on annual figures provided by Climate Bonds Initiative², global green bond issuance reached \$522.7bn in 2021, increased by 75%, compared to 2020 levels of \$298.1bn. This lifted the cumulative total to \$1.6tn.

The green debt market returned to rapid growth, with volumes increasing by 75% y-o-y. The green theme continued to attract new issuers and included a total of 839 issuers during the year. The average size of individual green bonds rose by more than 50% to reach \$250mn. The addition of developed market (DM) sovereign bonds from new and existing issuers no doubt contributed to that growth.

Table 1: Green bond market score card

	2021	2020	Percent change YOY
Size of market	USD522.7bn	USD298.1bn	 75%
Number of issuers	839	636	 32%
Number of instruments	2,089	1,749	 19%
Average size of instrument	USD250m	USD165m	 51%
Number of countries	58	56	 3.5%
Number of currencies	33	34	 -3%

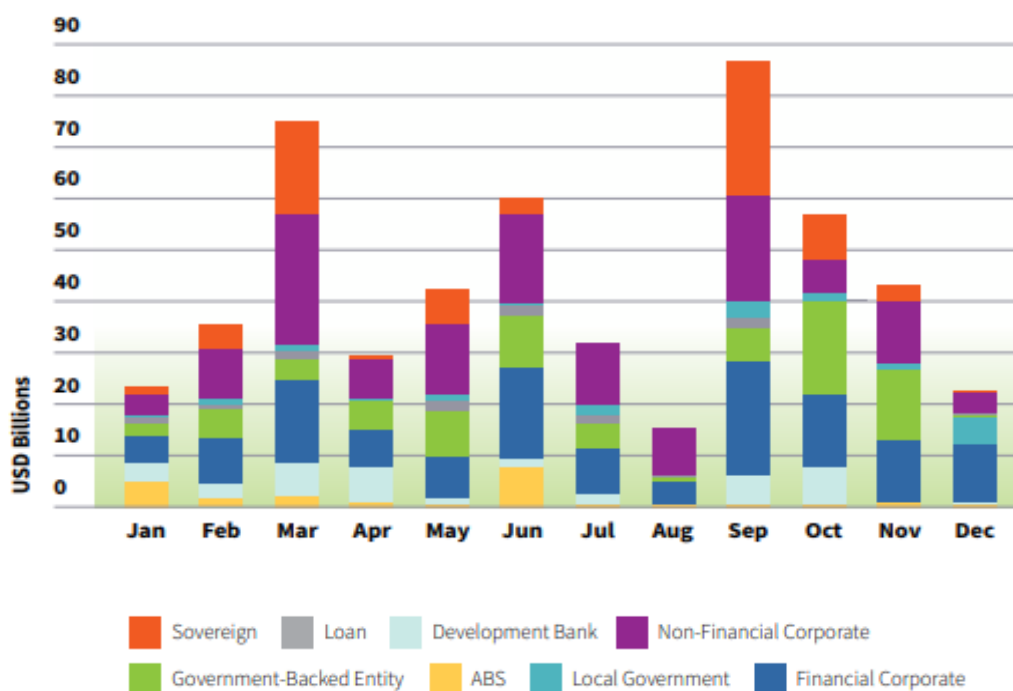
Source: Climate Bond Initiative

¹ https://www.climatebonds.net/files/reports/cbi_global_sotm_2021_02h_0.pdf

² The Climate Bonds Initiative is an international investor-focused not-for-profit organisation working to mobilise the \$100tn bond market for climate change solutions. The mission 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 goals.

Rising inflation persisted driven by the post-COVID-19 economic recovery and higher energy prices. Issuers were keen to fund upcoming liabilities while interest rates remained low, and September was the most prolific month in the history of the green bond market (USD86bn).

Figure 1: September 2021 was the busiest month on record for green bonds



Source: Climate Bond Initiative

The Sovereign Green Bond Club continued to expand its membership. Eleven countries added \$72.8bn with new bonds or taps; Italy, the UK, Serbia, Spain, and South Korea issued debut sovereign green bonds. In addition, in 2021 private sector issuers returned to the green bond market in force. There was extraordinary growth from emerging market (EM) financial and non-financial corporate issuers.

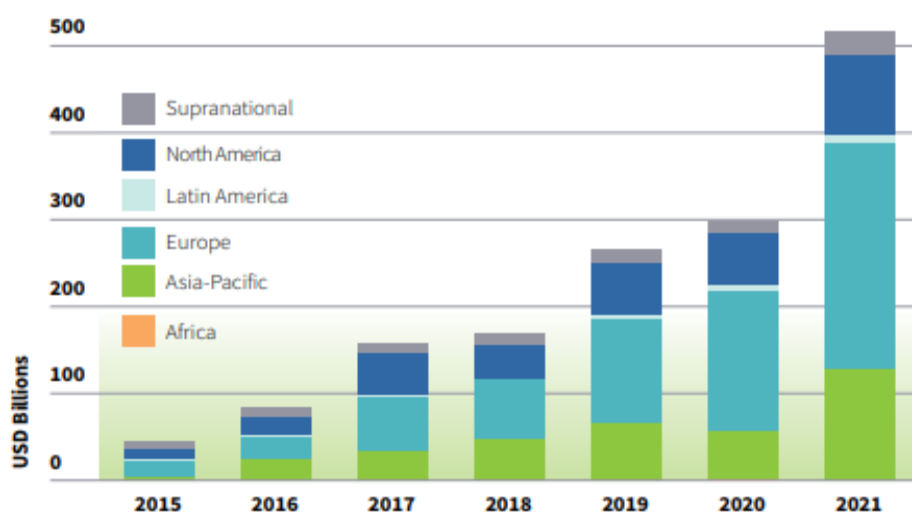
The most aggressive y-o-y growth in the region came from financial corporate (136%) and sovereign (103%) issuer types. Six European countries added sovereign volumes in 2021, including four debut issuers, and taps from three countries.

Regions and Countries

Three quarters (73%) of the 2021 green bond volume originated from developed markets (DM), while 21% came from emerging markets (EM) and just 4% was issued by supranational issuers (SNAT).

Half of the 2021 green bond volumes originated in Europe which contributed \$265bn (50%) to the total. Asia-Pacific became the second most prolific region for green bonds reaching a cumulative total of \$371.7bn by year end. A third of the cumulative Asia-Pacific green bond issuance was added in 2021 (\$129.5bn). North America fell one spot to third place with cumulative green bond issuance of \$343bn. The 2021 annual figure of \$92bn was 55% larger than the \$60bn recorded for the prior year, helped by stronger policy messaging and prevailing low rates. SNAT issuers were the fourth largest source of green bonds with the cumulative total reaching \$120.7bn at the end of 2021. Annual volumes doubled to \$27.3bn from 2020, and the increase can be explained by one bond: the green debut from the European Union (EU) worth \$13.9bn.

Figure 2: Issuance by Region: Europe Drives 2021 Growth

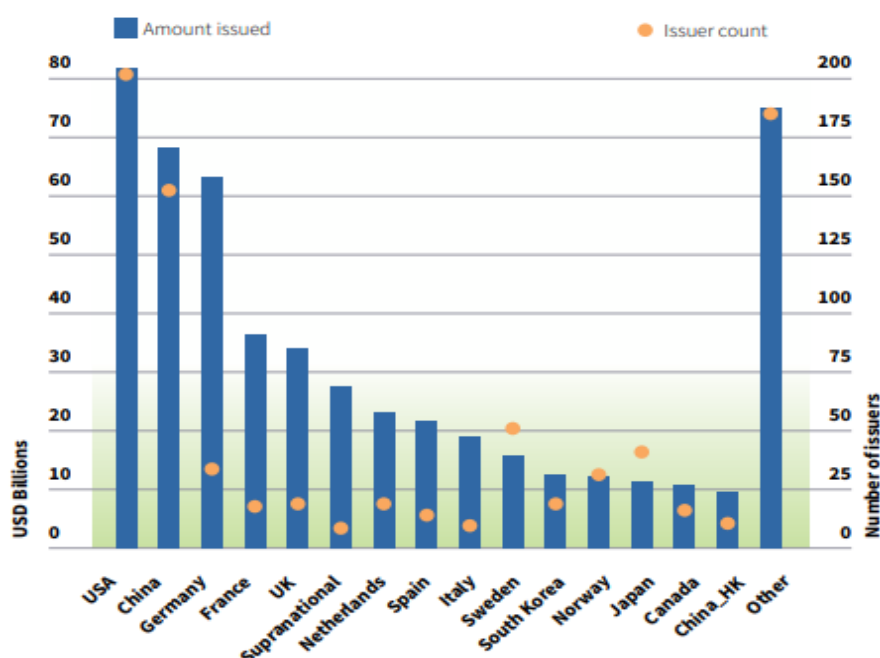


Source: Climate Bonds Initiative

As for countries, the USA maintained its position as the most prolific source of green bonds. Volumes increased by 63% to \$81.9bn from \$50.3bn in 2020. The cumulative total stands at \$304bn, which is 50% larger than China, the next largest country source (\$199bn).

The US green bond market has been characterised by a relatively high number of issuers bringing smaller deals. In 2021, 204 issuers came to the market with the average sized deal increasing to \$100mn from \$70mn in 2020.

Figure 3: Top 2021 Countries: Amount Issued – Number of Issuers



Source: Climate Bonds Initiative

China bounced back from a shaky 2020 (\$23.8bn) with an almost threefold increase in volumes (\$68.1bn) and almost two and a half times the number of securities (268 in 2021, 109 in 2020). The most aggressive growth occurred in the non-financial corporate space, as volumes grew fivefold to \$31.2bn. Meanwhile, Chinese ABS evaporated to a single bond in 2021 after 17 deals in 2020.

Germany's annual green bond volumes increased by 49% on the year to \$63.2bn, helped by strong growth in financial corporates. Deutsche Bank priced 48 green

bonds with a combined size of \$10.6bn. The German government doubled down on its commitment to the green bond market with two new bonds worth almost \$11.5bn. Germany now has a total of four sovereign green bonds.

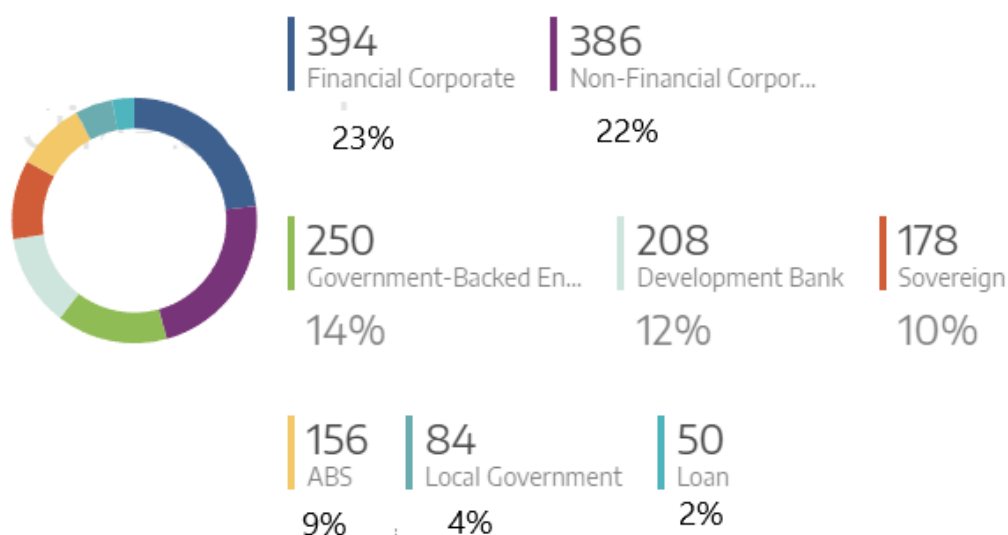
France consolidated its policy leadership position with its second sovereign green bond which by the end of the year was \$13bn. Total issuance originating from France was broadly static on the year at \$36bn down from \$37bn in 2020.

Issuer Types

Private sector issuance recovered in 2021 with strong growth coming from financial corporate (143%) and non-financial corporate (111%) issuers. At the end of 2021, these two issuer types together represented 44% of cumulative green bond volumes.

Sovereigns also experienced triple digit growth of 111% on the period, and now contributes 10% to cumulative volumes. The UK provided 30% of the sovereign green bond supply as it supported its COP-26 hosting duties with a pair of green bonds worth \$21bn. Four other issuers joined the sovereign green bond club during 2021: Spain (\$5.9bn), Italy (\$10bn), South Korea (\$812mn) and Serbia (\$500mn).

Figure 4: Green Bonds amounts issued globally by type of issuer (\$bn), 2021



Source: Climate Bonds Initiative

Financial corporates reversed the supply contraction of 2020 (\$55bn), to come back with green bonds reaching \$135bn in 2021. A third of the total came from China (17%) and Germany (16%) combined. Among the 31 Chinese issuers, China Development Bank (\$6.5bn) and ICBC (\$4.5bn) issued the largest green bond volumes in 2021.

Non-financial corporates ended 2021 as the largest issuer type based on cumulative volumes which topped \$361bn. In 2021, 328 issuers printed 540 green bonds totalling \$140.6bn. Chinese state-owned company China Three Gorges Corporation was the largest issuer, pricing 18 green bonds with a combined value of \$7.2bn. Among the top ten non-financial corporate issuers, two stand out as bringing much needed diversity to the green bond market. American multinational Mondelez made its debut with a trio of green bonds worth \$2.4bn while high yield issuer Ford Motor Co finally came to the market with its first green bond worth \$2.5bn.

Table 2: Top green corporate issuers, 2021

Issuer Name	2021		Cumulative totals	
	USDbn	Number of green bonds	USDbn	Number of green bonds
China Three Gorges Corp	7.2	18	9.2	23
Iberdrola	3.3	3	16.4	21
CTP Group	3.0	3	4.2	5
Ardagh Group	2.8	4	2.8	4
Engie SA	2.6	3	16.9	14
Ford Motor Co.	2.5	1	2.5	1
EDP	2.4	3	2.4	3
State Grid Corporation of China	2.4	3	2.4	3
Mondelez International	2.4	3	2.4	3
Liberty Global	2.3	3	2.3	3

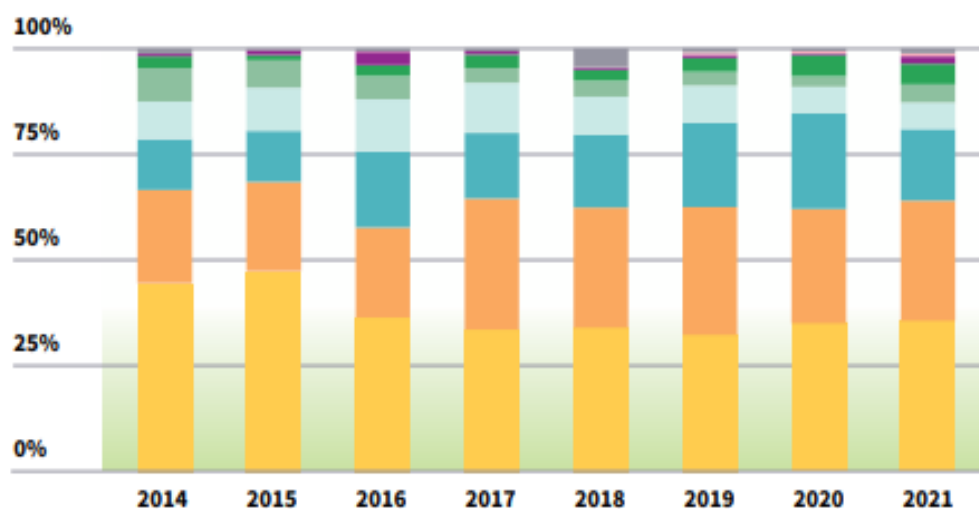
Source: Climate Bonds Initiative

Use of Proceeds (UoP)

Energy, Buildings, and Transport were the three largest UoP categories, collectively contributing 81% to the 2021 total. This is nevertheless a drop versus the record 85% in 2020. All UoP categories exhibited growth y-o-y, ranging from 824% in Industry to 31% in Transport.

Non-financial corporate issuers were the strongest supporters of Energy and Transport providing 40% and 27% of the total capital, respectively, while Buildings received most support from financial corporates (37.5%). Allocations to Industry UoP increased from just \$1bn in 2020, to \$9.1bn in 2021. Industry was earmarked as a UoP category in 32 deals including sovereign deals from the UK, Serbia, and Hong Kong, and the EU green bond.

Figure 5: Use of Proceeds allocation by category, 2014 - 2021



Source: Climate Bonds Initiative

Currency

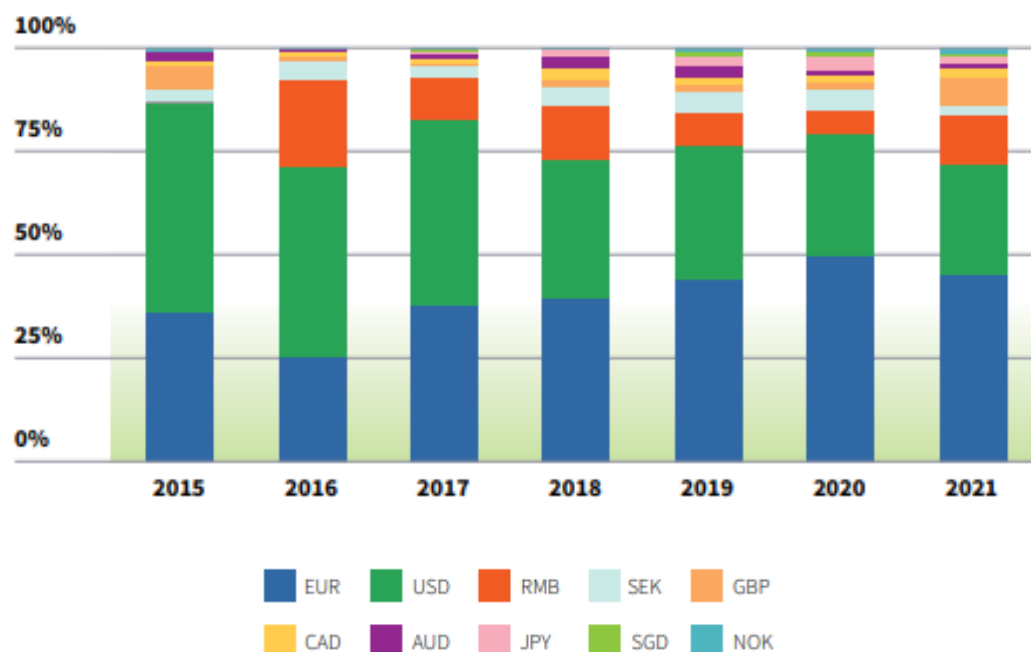
Euro was the preferred currency in terms of volume, and number of international issuers (36). However, the number of issuers at 408 was under half of those issuing in USD. Most (96%) of the bonds issued in USD originated domestically, while 81% of

bonds issued in EUR originated from issuers using EUR as their official currency. The European green bond market is the most developed in the world, being the source of numerous dedicated investment mandates, and the most advanced policy measures. Where practicable, issuers prefer to issue in EUR to obtain maximum investor diversification.

Hard currencies were the source of 82% of green bond issuance in 2021, a 3% decline on the prior year. Issuance in the soft currencies increased by 102% largely because of the rebound in RMB issuance which reached \$58.7bn from \$17.4bn in 2020.

The number of currencies remained static at 33. The share of the top three currencies EUR (43%), USD (26%), and RMB (\$58.7bn) remained similar to the prior year (81%). The amount of EUR issuance in 2021 (\$226.7bn) exceeded that of EUR and USD put together in 2020 (\$225.6bn).

Figure 6: Percentage of green bond issued per currency, 2015 - 2021



Source: Climate Bonds Initiative

Q3 2022 market highlights

Cumulative green bond issuance reached \$2tn in Q3 2022. This green milestone unites with the rising crop of sustainable bond labels (social, sustainability, sustainability-linked and transition), to reach a combined lifetime \$3.5tn volume at end of the Q3. The news comes as Climate Bonds calls for the market to scale labelled issuance to a volume of \$5tn per year by 2025 to fight climate collapse, which looms large after years of inaction.

Table 3: GSS+ scorecard

	Q3 2022		2022 YTD		Cumulative since 2006	
	USDbn	% total	USDbn	% total	USDbn	% total
Green	79.4	52.1	332.5	52.3	2008.1	57.2
Social	23.1	15.2	94.2	14.8	617.0	17.6
Sustainability	34.4	22.6	142.1	22.4	678.9	19.3
SLB	14.7	9.6	63.5	10.0	192.9	5.5
Transition	0.7	0.5	3.4	0.4	12.7	0.4
Total	152.3	100	635.7	100	3509.6	100

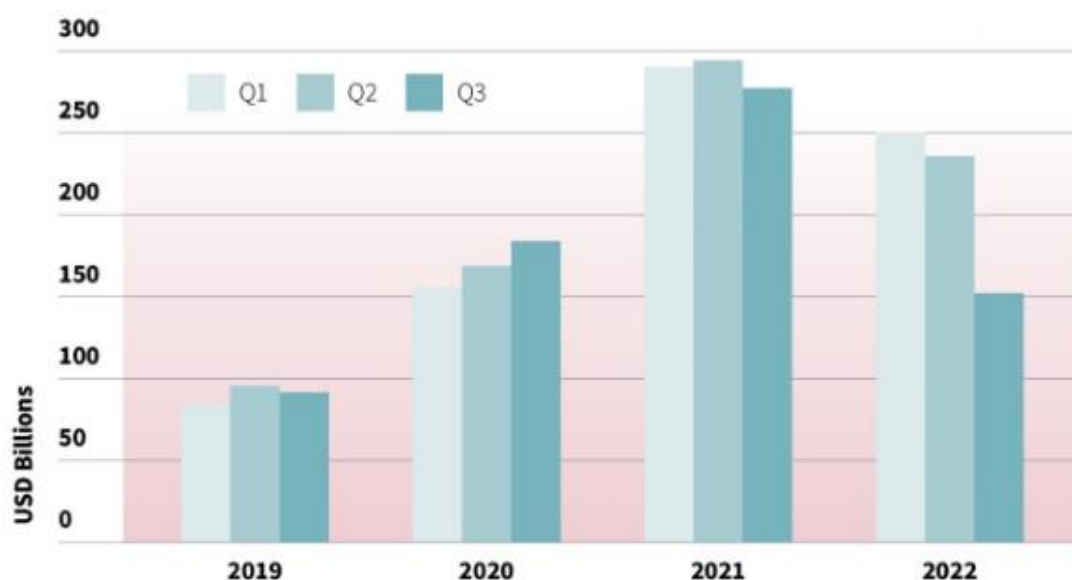
Source: Climate Bonds Initiative

The geopolitical tensions and rising inflation that have emerged this year have stunted the global bond market and contributed to a drop in issuance across the board. In 2021, a record year for GSS+ issuance, labelled debt constituted 5% of all debt issued. Though 2022 has seen a decrease in global bond volumes, the share of GSS+ issuance has remained unchanged from the 2021 contribution. It is hoped that labelled debt, which has consistently drawn strong investor appetite from the market, can offer resilience in trying economic circumstances.

The total green, social, sustainability, sustainability-linked (SLB) and transition bond (GSS+) volumes reached \$152.3bn in Q3 2022, a decline of 35% compared to Q2 2022, and 45% compared to Q3 2021. Year-to-date volumes of GSS+ debt had reached \$635.7bn by the end of Q3. More than half of the total (52%, \$332.5bn)

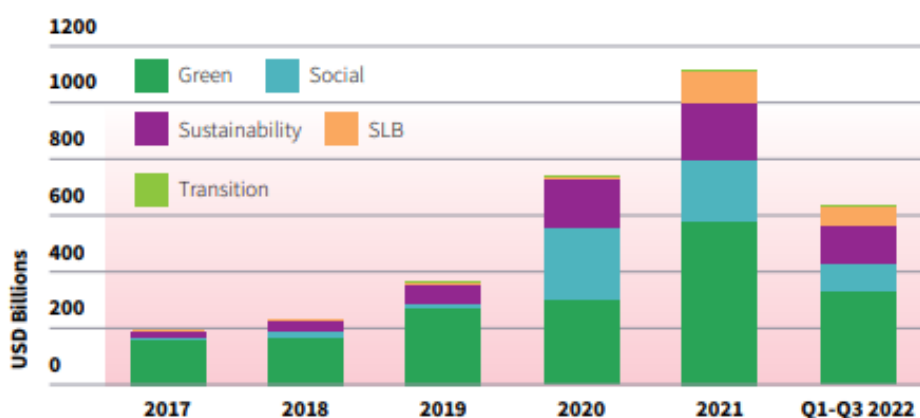
came from green bonds. Sustainability bonds supplied 22.4% (\$142.1bn), social 14.8% (\$94.2bn), SLBs 10% (\$63.6bn), and transition comprised the smallest share at 0.5% (\$3.4bn).

Figure 7: GSS+ volumes per quarter, 2019 - 2022



Source: Climate Bonds Initiative

Figure 8: GSS+ volumes issued per year, 2017 – Q1/Q3 2022

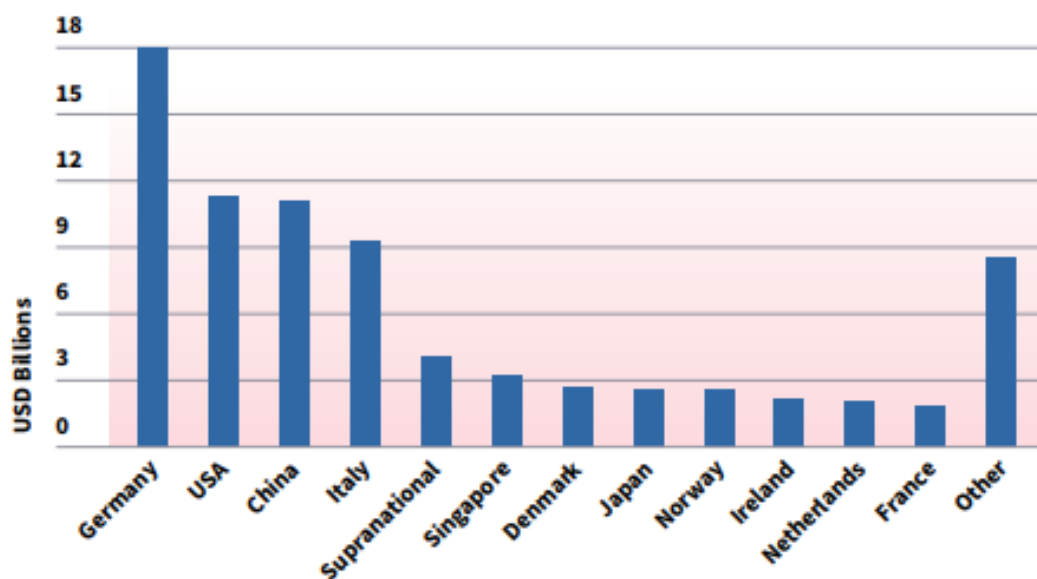


Source: Climate Bonds Initiative

German development bank KfW was the largest of the non-sovereign Green Bond issuers in Q3 2022, raising a total of \$4.3bn. The majority of that came from a €4bn

(\$4.1bn) 7-year deal, and smaller amounts were issued in HUF and HKD, while a CNY bond was reopened. By the end of September, Climate Bonds had recorded 2022 green volumes of \$8.3bn from KfW, making it the third largest green bond issuer of 2022 after the European Union (\$17.3bn) and the European Investment Bank (EIB) (\$9.6bn).

Figure 9: Largest source of green bonds, Q3 2022



Source: Climate Bonds Initiative

Table 4: Q3 2022 non-sovereign green bond issuers

Largest green bond issuers Q3	Country	USD added to relevant database in Q3
KfW	Germany	4.3bn
EIB (European Investment Bank)	Supranational	4.0bn
General Motors	USA	2.3bn
Orsted AS	Denmark	2.0bn
Amprion GmbH	Germany	1.8bn

Source: Climate Bonds Initiative

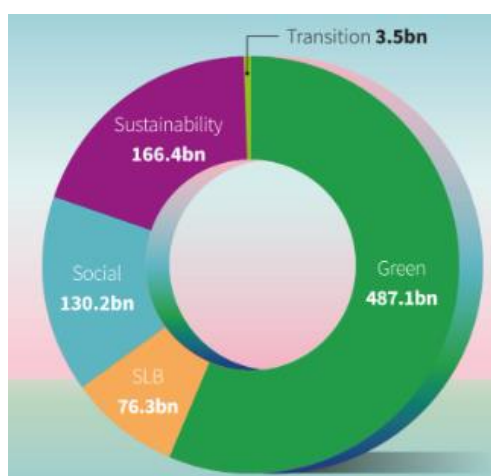
2022 highlights³

Climate Bonds' Market Intelligence has revealed Green, Social, Sustainability, Sustainability-linked (SLBs) and transition bonds (GSS+) issuance held its market share despite a difficult year for fixed-income markets, in which GSS+ volumes fell year-on-year for the first time in a decade.

In 2021, the share of GSS+ issuance reached record volumes of over \$1tn and held a 5% share of the global bond market. However, challenging macroeconomic factors witnessed in 2022 have contributed to a drop in debt volumes across the board. 2022 saw GSS+ issuance hold its 5% share of the global bond market despite the tough terrain leading volumes to fall to \$863.4bn.

As has been the case for several years now, green bonds accounted for the lion's share of total issuance. Green bonds, used to raise funding to support environmentally sustainable initiatives, accounted for just over half of the \$863.4bn issued in 2022 – \$487.1bn. Sustainability bonds contributed \$166.4bn, social bonds totaled \$130.2bn, SLBs saw \$76.3bn, whilst transition bonds saw just \$3.5bn.

Figure 10: Sustainable debt issuance in 2022



Source: Climate Bonds Initiative

³ CBI (2023), "2022 Market Snapshot: And 5 big directions for sustainable finance in 2023", <https://www.climatebonds.net/2023/01/2022-market-snapshot-and-5-big-directions-sustainable-finance-2023>

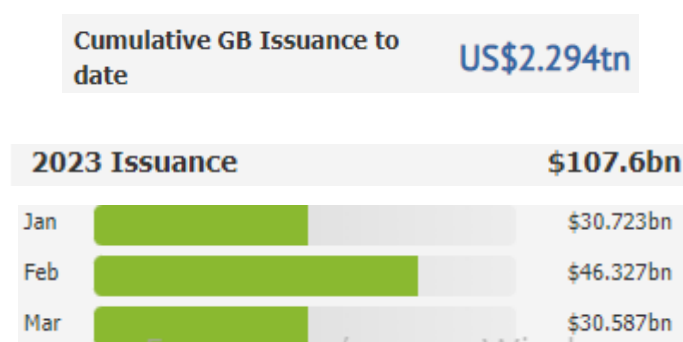
The GSS issuance decline is attributed to a general decrease in bond issuances in most major markets amid what is now being called the ‘polycrisis’ or ‘permacrisis’, where macroeconomic trends have been compounded by geopolitical instability and supply chain disruption. “Lenders were left reluctant to lock-in high-credit rates as the fixed-income landscape shifted, squeezing supply that historically has been outstripped by heavy investor demand,” the Climate Bonds Initiative said in a statement.

2023 – What Lies Ahead

The Climate Bonds Initiative is predicting a “stellar year” for green, social and sustainability-linked bond issuance in 2023, with green bonds likely to account for an even greater proportion. This has been partly attributed to the continued development of net-zero targets for mid-century, which now cover 91% of global GDP. Moreover, nations and regions are increasingly backing these targets with 2030 plans and, as such, need to scale green investment this decade.

As of March 2023, the cumulative green bond issuance reached \$2.294tn⁴.

Figure 11: Green Bond Markets 2023



Source: Climate Bonds Initiative

However, Climate Bonds Initiative highlights that greater investment is needed this decade to prevent more macroeconomic volatility that makes bond issuance more

⁴ <https://www.climatebonds.net/>

challenging in the future. It warned that we are entering a new “age of volatility”, with the fallout of the pandemic and the ongoing war in Ukraine coming amid a time of extreme weather events that are more frequent and severe.

5 steps to \$5tn⁵

Climate Bonds is pushing for at least \$5tn in green bonds alone to be issued annually from 2025 onwards. Its recently published 5 steps to 5 trillion manifesto suggests five actions that we must take collectively to achieve this ambitious target.

1. Label Green

We must green the capital markets ecosystem by expanding this labelling to include all types of financial instruments from equities to short term borrowing, sectors, entities, and everything that comes beneath that including transition, resilience, nature-based solutions, and water. Liquidity and scale enable investors to commit to climate friendly investment mandates. At present, only a small fraction of the activities and participants contributing to green finance are being recognised. We need to identify what could qualify and include and celebrate all participants. Achieving this will enable the prioritisation of green activities and identification of green investment opportunities across all portfolios.

2. Define Transformation

We must expand our definitions to include areas beyond climate change mitigation. New areas requiring financing include transition, biodiversity, and adaptation and resilience including healthcare. Taxonomies that can be used by global investors seamlessly and with minimum transaction costs will facilitate global recognition of different green financial instruments.

⁵ https://www.climatebonds.net/files/reports/cbi_5steps_to_5trillion_03d_0.pdf

3. Accelerate Policy

Governments must signal clear support for net-zero by initiating a supportive policy environment for transition. Endorsing clear transition pathways, establishing certainty of future demand for financeable climate solutions, and addressing risks in areas where the private sector is unable to act. Issuing sovereign green bonds indicates strong government leadership catalysing market creation and development through scale and issuers often obtain cheaper funding to boot. Climate Bonds 101 Sustainable Finance Policies for 1.5° C is full of suggestions to get policy moving.

4. Grow Pipeline

Creating a large, predictable and climate friendly pipeline of expenditures and projects is the key to achieving net zero. This requires ambitious planning, supportive policy, and leadership from the public sector through actions such as investment in research and development, and incorporating climate considerations into planning. Pipeline prioritisation, a pain point for all economies, can be bolstered by stronger definitions.

5. Boost Emerging Markets

Mechanisms to get capital flowing from richer to poorer such as blended finance to absorb junior capital tranches, de-risking guarantees, and larger sized deals, must all be multiplied. Economic development must build in mitigation from the start, and large projects should be financed through the capital markets to encourage dedicated investment.

Prospects for Issuing Green Bonds in SE Europe

In **SE Europe**, an issuance market for green bonds does not actually exist, with only a small number of private sector companies and financial institutions having issued green bonds, but there are great prospects as the region is moving towards

decarbonization and RES and energy efficiency projects are constantly increasing, as analysed in IENE's reference study "SE Europe Energy Outlook 2021/2022"⁶.

Map: SE Europe, as Defined by IENE



Source: IENE

A list of Green Bond issuers in Greece is presented below, followed by issuers in the other countries of SEE region.

1. TERNA ENERGY

Greece's TERNA Energy issued a seven-year €150mn green bond in October 2019⁷. EBRD invested **€18mn** in the green bond issuance, being the first certified climate bond that the EBRD is supporting in the country. Ernst & Young has verified that the bond meets the Climate Bonds Initiative's classification as a certified climate bond.

⁶ IENE (2022), "SEE Energy Outlook 2021/2022", <https://www.iene.eu/en/congress/47/iene-study-see-energy-outlook-2021-2022>

⁷ Aristeidou, O. (2019), "EBRD invests €18mn in TERNA ENERGY's green bond", EBRD, <https://www.ebrd.com/news/2019/ebrd-invests-18-million-in-terna-energys-green-bond.html>

The investment is part of the EBRD's Greek Corporate Bonds Framework, developed to extend the Bank's support for the local corporate bond market and to strengthen its long-term viability. The funds will finance additional investments in renewable energy projects in Greece. The projects will also contribute to the country's target of increasing the share of renewable energy to 35% of its total energy consumption by 2030. In June 2017, the EBRD launched its original Greek Corporate Bonds Framework, which has successfully leveraged €760mn of listed bonds. A new framework, the €185mn Greek Corporate Bonds Framework II, was approved in June 2018, leveraging an additional €350mn to date.

TERNA Energy is the largest wind-electricity producer in Greece. It has 1,512 MW of renewable energy power plants in operation or under construction, primarily wind farms, located in Bulgaria, Greece, Poland and the United States of America.

2. ELLAKTOR GROUP

2019 was the year in which Greece's ELLAKTOR Group, taking into account the favorable conditions in the international capital markets, proceeded to the issuance of an international, green bond, with fixed rate without collateral, totaling **€670mn** over a five-year period. This was the largest high yield green bond in Europe for 2019 and the first high yield green bond in Greece. ELLAKTOR's bond recorded a wide participation from Europe, Asia and America, with more than 100 investors, of which 75% were foreign portfolios and only 25% of Greek origin⁸.

3. MYTILINEOS

MYTILINEOS S.A., a leading industrial and energy company with internationally diverse assets and operations announced on April 22, 2021 the successful pricing of its inaugural green bond offering of **€500mn** aggregate principal amount of 2.25% senior notes due 2026 (the "Notes"), at an issuance price of 100%. The proceeds

⁸ ELLAKTOR Group (2020), "Ordinary General Meeting of the Shareholders of ELLAKTOR Group", https://ellaktor.com/wp-content/uploads/2020/09/PRESS-RELEASE-ORDINARY-GENERAL-MEETING-10.09.2020_EN.pdf

from the Offering will be used (i) to repay certain existing indebtedness, (ii) for general corporate purposes, and (iii) to pay fees and expenses in connection with the Offering. An amount equivalent to the net proceeds from the Notes will be used to finance or refinance, in whole or in part, Eligible Green Projects (including other related and supporting expenditures) in accordance with the company's Green Bond Framework.⁹

4. NATIONAL BANK OF GREECE

NATIONAL BANK OF GREECE completed successfully the placement of a green senior bond in the Greek market in October 2020, totaling **€500mn**. The transaction also marks the first issue of a senior bond by a Greek bank since 2015. The bond matures in six years, and is callable in five years, with a coupon of 2.75% and a yield of 2.875%.

According to ICMA principles for green bonds, based on which the transactions was issued, NBG is contractually committed to channeling all the funds raised from the sale of the bond to financing projects related to the green economy. It should be noted that NBG already maintains a high share (40%) in the Renewable Energy Market market – a level that is expected to strengthen further.

The financing of projects in the energy sector, and above all in renewable energy, is a strategic goal of the bank, which targets financing of €3bn over the next 3 years.

The transaction attracted the interest of a large part of the investor community, raising funds of circa €1.2bn, with the participation of 80 – in their majority international – institutional investors. The success of the undertaking, reflecting

⁹ <https://www.mytilineos.com/news/company-news/mytilineos-s-a-announces-the-successful-pricing-of-its-inaugural-green-bond-offering-of-500-million-senior-notes-due-2026/>

demand by a broad investor base, is tangible confirmation of the confidence that NBG enjoys, and the general prospects for the Greek economy.¹⁰

5. PIREAUS BANK

Piraeus Financial Holdings S.A. announced that its subsidiary Piraeus Bank S.A. ("Piraeus Bank") has successfully completed the book building process for the issuance of a **€500mn** Green Senior Preferred Bond at a coupon of 3.875%, attracting the interest of a large number of institutional investors.

The Bond has a maturity of six years, an embedded issuer call option after five years and will be listed on the Luxembourg Stock Exchange's Euro MTF market.

The issuance followed a two-day marketing period and received significant institutional investor support with an order book in excess of €850mn from more than 70 investors.¹¹

6. NOVAL PROPERTIES

The Company has issued a Green Bond Loan for a total amount of €120mn, duration seven years, divided into 120,000 intangible, common, anonymous bonds with nominal value €1,000 each.

Noval Property's green bond, which is listed on the Athens Stock Exchange, is aligned with the International Capital Market Association's (ICMA) Green Bond Principles, and will help strengthen corporate climate governance, while supporting transparency and integrity in the development of the local green capital market.

The issuance advances Noval Property's strategy to scale up by providing funding to pursue new investments and property developments, while diversifying its funding sources and restructuring its balance sheet.

¹⁰ National Bank of Greece landmark issue of a €500mn Green Senior Bond, <https://www.nbg.gr/en/group/press-office/reports/national-bank-of-greece-landmark-issue-of-a-500m-green-senior-bond-20527>

¹¹ Piraeus Bank successfully priced its inaugural Green Senior Preferred Bond amounting to €500mn, <https://www.piraeusholdings.gr/en/press-office/announcement/2021/10/announcement-27-10-2021>

7. Greek Government¹²

Greece contemplates the issuance of an inaugural Green GGB (Greek Government Bond) sometime in 2023, to (i) support the implementation of its sustainability agenda and (ii) enhance PDMA's (Public Debt Management Agency) and achieving net-zero by 2050, as outlined in the May 2022 Climate Law. The implementation of Greece' sustainability strategy involves public investments that can be financed through the issuance of Green Bonds, as presented by the Minister of Finance at the UN's COP-26 (November 2021).

By issuing Greece's first Green sovereign bond, PDMA intends to:

- Align the State's financial policy with national sustainability targets, by further evidencing commitment to its sustainability agenda and by facilitating the monitoring of progresses made under Greece's ESG strategy (through regular reporting).
- Strengthen Greece's investor base, by addressing institutional investors' rising ESG standards, and by reaching out to new types of investors.
- Stand at the forefront of Eurozone sovereign issuers, by joining the few Eurozone Member States already present on the sovereign Green bond market, and by anticipating the growing impetus of Credit Rating Agencies for environment-related assessment criteria.

Table 5: Key features of the contemplated Green GGB issuance

Format	Green GGB	Currency	EUR
Timing of issuance⁽¹⁾	H2 2023	Size⁽¹⁾	Benchmark size
Maturity⁽¹⁾	Medium to long-term (complementary to the conventional GGB yield curve)	Framework	Green Bond Framework (under development, in line with EU and international best standards)

Note: (1) Subject to market conditions

Source: Hellenic Republic

¹² Hellenic Republic – Funding Strategy for 2023 (December 2022), <https://www.pdma.gr/en/component/content/article/17-investor-relations-library/5158-funding-strategy-for-2023?Itemid=197>

An overview of Green Bond issuers in SEE countries, other than Greece, follows.

Cyprus

S.S.H Solar Finance PLC (Issuer), a subsidiary of the Holding Company S.S.H. SCANDINAVIAN SOLAR PARKS HOLDING Ltd, intends by April 2023 to issue a green bond to fund the Group's green projects, where Group refers to S.S.H. Scandinavian Solarparks Holding Ltd and its subsidiaries.

To further enable the Holding Company to finance its operations and expand its solar park business portfolio, the Board of Directors has decided for the SSH Solar Finance Plc to issue a Green Bond within the Green Bond Framework aligned with the United Nations' Sustainable Development Goals.

S.S.H. Scandinavian Solarparks Holding Ltd is an independent power producer that develops, owns, and operates utility scale solar power generation plants. The Holding Company is licensed by Cyprus Transmission System Operator (CERA) as a to producer of electricity generated by Photovoltaic Parks.

The amount of Green Bonds issuance will be approximately 5 million euros.

IENE following an agreement with the Holding Company prepared the Verification Report which is necessary for the issuance of a Green Bond to be certified by Climate Bond Initiative (CBI), in accordance with the Climate Bond Standard and the Solar Criteria v2.1.

Romania

Raiffeisen Bank Romania (RBRO) has successfully placed on 14 May 2021 and 11 June 2021 the first two green bond issuances in local currency ever listed on the Bucharest Stock Exchange (BSE), the first with a total amount €81mn and the second

issuance being the largest corporate bond placed and listed on BSE for an amount of €244mn¹³.

Croatia

A sustainability bond was issued in 2022 by Raiffeisenbank Austria d.d. (RBA), the Croatian subsidiary of Austria's Raiffeisen Bank International AG, in a private placement of €200mn.

RBA became the first bank in Croatia to establish a sustainability bond framework, enabling it to issue both sustainability and green bonds in accordance with the International Capital Market Association's guidelines for sustainability bonds. This issue was the first sustainability bond ever issued by a bank in Croatia.

Serbia

In September 2021, the Republic of Serbia issued a €1bn sovereign green bond to finance the country's green agenda.

According to Serbia's Green Bond Framework, proceeds from Serbia's sovereign green bonds will be used for financing and refinancing in the areas of renewable energy (with emissions of up to 100 grams of carbon dioxide equivalent per kilowatt-hour), energy efficiency, sustainable water and wastewater management, pollution prevention and control and circular economy, protection of the environment and biodiversity and sustainable agriculture¹⁴.

Turkey

The first green bond in Turkey was issued in 2016 by Türkiye Sınai Kalkınma Bankası (TSKB), with the \$300mn raised to be used in energy, health, and education projects. The launch of the bond is considered a significant success since the bond demanded

¹³ Raiffeisen Bank Romania Green Bond Report, <https://www.raiffeisen.ro/wps/wcm/connect/fbdfe7b4-0418-4742-b1ba-f07321ba4539/RBRO-Green-Bond-Report-2022.pdf?MOD=AJPERES>

¹⁴ <https://www.greenfinanceplatform.org/policies-and-regulations/serbia-issued-sovereign-green-bond>

was 14 times more than expected. Following the first green bond, several other companies issued green bonds to finance their sustainability-linked projects. Moreover, after TSKB, Turkey's two biggest banks also issued green bonds to fund the construction of green buildings and renewable energy projects¹⁵. Akbank issued the first Green Bond in the Turkish banking sector during the COVID-19 pandemic, which amounted to \$50mn with a 4 year 110 days maturity¹⁶.

IENE's Advisory Role in the Issuance of Green Bonds

Over the years, IENE has built a regional network of energy experts with considerable experience on RES and Energy Efficiency projects, including advisory and assurance professionals, with solid experience and hence capable in supporting clients on green bond issuance across SE Europe. Between them, team members have worked on some of the leading issuances to date. IENE offers a wide range of services to support companies and investors during the lifecycle of green bond issuance. More specifically, IENE can offer the following range of services:

- 1. Review financing options:** IENE reviews and challenges the financing objectives and alternatives, enabling the investor to optimize the capital structure and making the most of debt market appetite. IENE specialists can help determine a preferred funding route, and act as a sounding board for the investor's management team.
- 2. Design green bond criteria:** IENE can help develop a green bond framework, 'green' criteria and specifications for the management of proceeds. IENE professionals can advise on project selection and evaluation, fund management processes and controls, and benchmark processes against industry best practice and evolving standards.

¹⁵ <https://ceelegalmatters.com/turkey/21403-the-rise-of-green-finance-in-turkey>

¹⁶ <https://www.akbankinvestorrelations.com/en/news/detail/Akbank-becomes-the-first-Turkish-bank-to-issue-a-Green-Bond-during-COVID-19-pandemic/540/1283/0>

- 3. Execution:** IENE specialists can advise on the presentation of green credentials to potential investors and the issuance process of the debt, and liaise with stakeholders including credit rating agencies. In this context, IENE can:
 1. Prepare the necessary “green bond” report (i.e. Verifiers’ Report) and information form
 2. Obtain a decision on Pre-Issuance Certification
 3. Facilitate the issuance of the “green bond” using the Certified Climate Bond mark
- 4. Ongoing stakeholder management:** Once issued, IENE can help the investor assess the performance of a green bond through independent bond investor studies, giving unbiased insight into bondholders’ perspectives and into the profile of bondholders.
- 5. Third-party independent assurance:** To increase the credibility of the green bond, IENE can provide assurance on the issuer's processes and control for selecting green projects and managing proceeds, as well as on the issuer's progress reports.
- 6. Monitoring and reporting:** IENE can undertake to develop performance indicators and project evaluation metrics to monitor and report on the financial and environmental outcomes of projects. Furthermore, IENE can support the investor in reporting to his company’s internal and external stakeholders. In this context, IENE will assist the investor in:
 - a) Confirming the certification post-issuance within 12 months
 - b) Reporting annually on the progress of the funded project(s).