INSTITUTE OF ENERGY
FOR SOUTH-EAST EUROPE

The Role of Green Bonds in Enhancing Energy Transition in SE Europe

An IENE Study (M79)

Athens, July 2024

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Prepared by IENE's Research Team

Institute of Energy for SE Europe (IENE)
3 Alexandrou Soutsou, 106 71 Athens, Greece
Tel.: +0030 210 3628457, 3640278 fax: +0030 210 3646144
web: www.iene.gr, e-mail: secretariat@iene.gr

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1. Global Green Bond Activity

2023 Global Green Bond Market Overview[1]

Based on figures provided by Climate Bonds Initiative[2], the cumulative volume of USD4.4tn of green, social, sustainability, transition, and sustainability linked (GSS+) debt in alignment with its screening methodologies (aligned) had been recorded by the end of 2023.

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% year-on-year increase. Conversely, there was a year-on-year 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.

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 year on year. Conversely, anti-ESG sentiment affected aligned GSS+ volume in the USA resulting in a 38% decline.

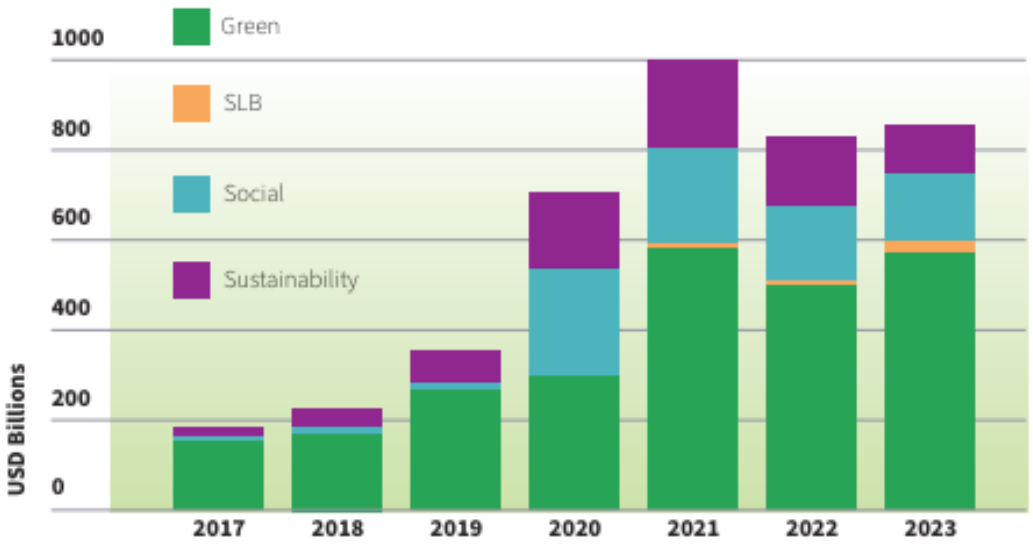
Aligned SLB issuance exhibited an 83% increase in 2023, with deals from 32 issuers. Climate Bonds published its Sustainability-Linked Bond Database Methodology in 2023, and a corresponding data product was launched in early 2024. In 2023, 7,323 aligned deals were priced which was 14% fewer than the previous 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.

[1] https://www.climatebonds.net/files/reports/cbi_sotm23.pdf

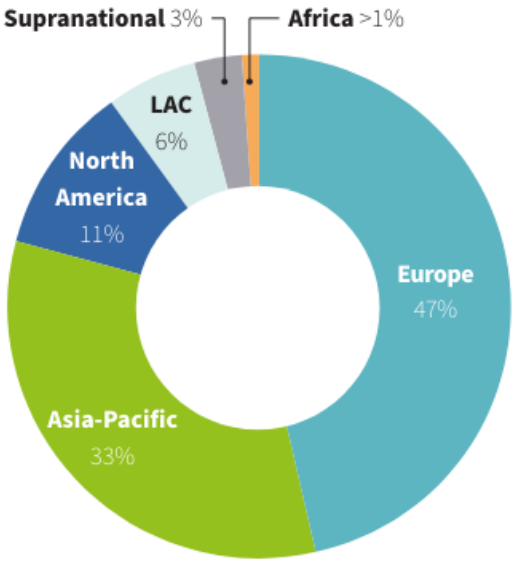
[2] The Climate Bonds Initiative is an international investor-focused not-for-profit organisation working to mobilise the $100tn bond market for climate change solutions. The mission is to help drive down the cost of capital for large-scale climate and infrastructure projects and to support governments seeking increased capital markets investment to meet climate goals.

Figure 1: Aligned GSS+ issuance increased to USD870bn in 2023



Source: Climate Bond Initiative

Figure 2: Europe was the largest source of 2023 aligned volume



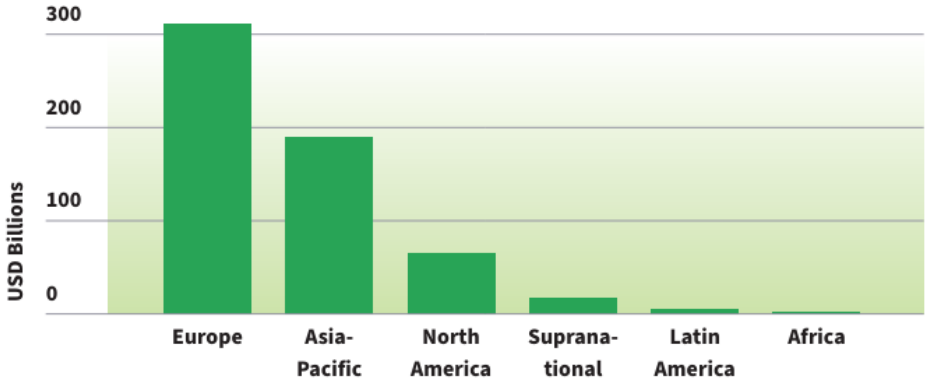
Source: Climate Bond Initiative

Green

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% year on year. 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

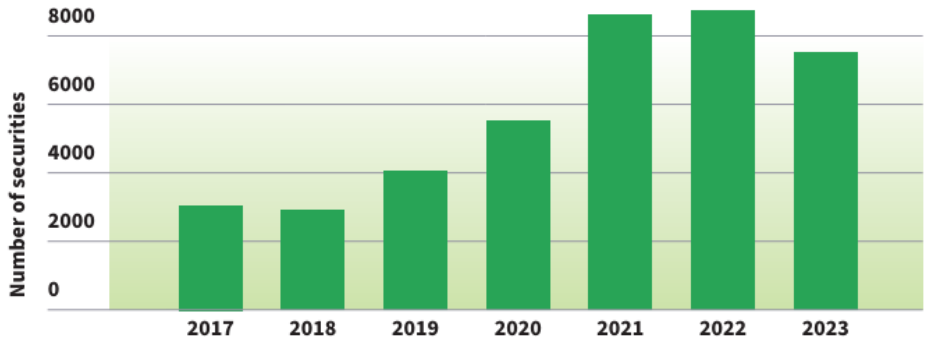
issuer was the United Kingdom (sovereign) with aligned issuance of GBP18.3bn (USD22.5bn) composed entirely of taps. In 2023, private sector issuers returned to the green bond market in force, as aligned issuance from non-financial corporate issuers grew by 29% year on year. May was the most prolific month in 2023 with aligned green issuance of USD61.6bn.

Figure 3: Europe led on 2023 aligned green volume



Source: Climate Bond Initiative

Figure 4: The number of aligned green deals declined by 13% year on year



Source: Climate Bond Initiative

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.

A total of 2,743 aligned green bonds were recorded in 2023, a decline of 29% compared to 3,848 in 2022. There was a 49% drop in the number of such deals originating from the USA, which fell to 1,246 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 USD237mn), and Indiana Finance Authority (53 deals with combined volume of USD563mn) all from the USA.

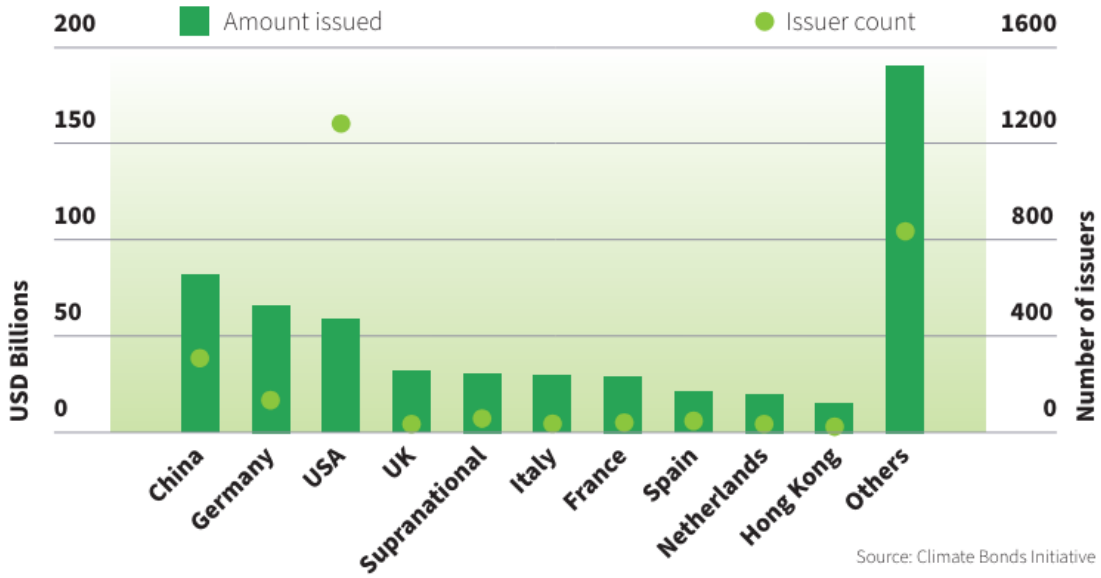
Table 1: Top 10 aligned green issuers in 2023

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

Source: Climate Bond Initiative

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% year on year 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, 1,231 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.

Figure 5: China was the largest source of green volume in 2023



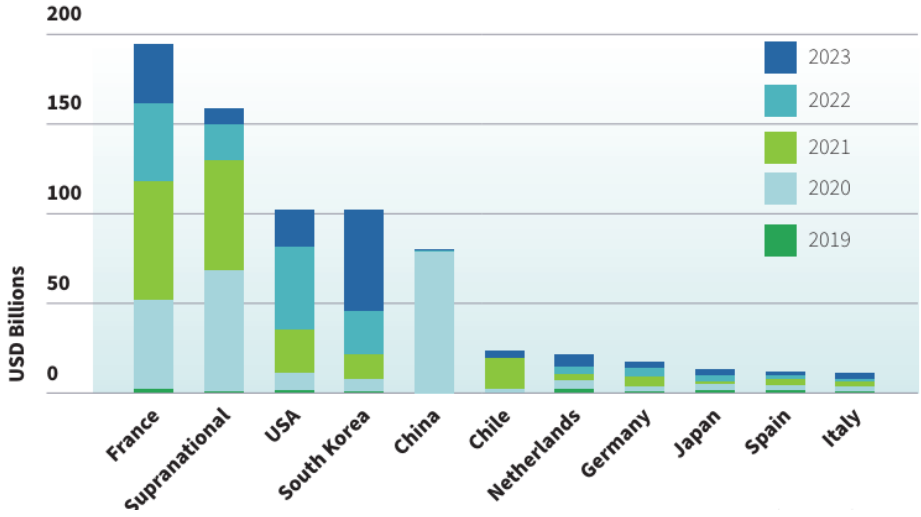
Source: Climate Bond Initiative

Social

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.

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. 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.

Figure 6: South Korea dominates aligned social volume in 2023, France leads 5-year volume



Source: Climate Bond Initiative

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.

Table 2: The 2023 aligned social bond market in numbers

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)

Source: Climate Bond Initiative

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.

In 2023, 2,900 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.

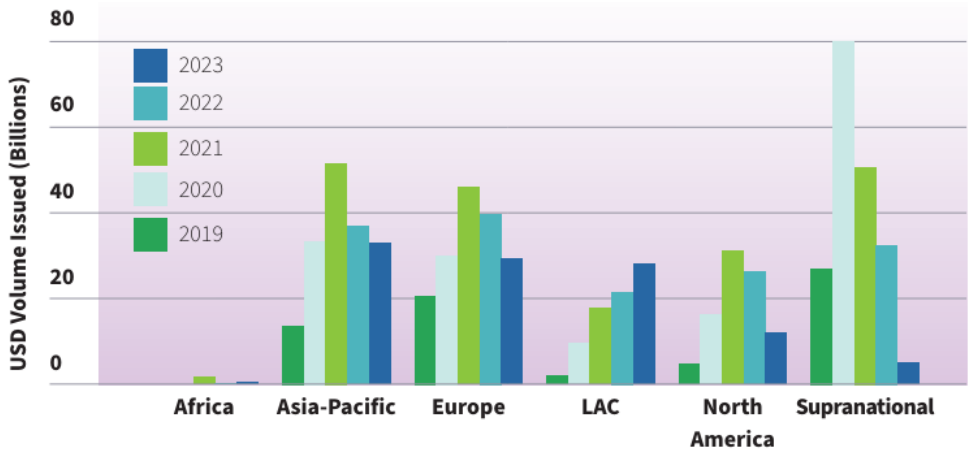
Sovereigns returned to the social bond market in 2023, having been absent in 2022. Chile priced five aligned deals, and Colombia priced two, collectively worth USD5.9bn. In 2023, government-backed entities priced the largest volume of aligned social bonds (USD91bn), USD8.4bn less than the previous year, 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 2,562, 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.

Sustainability

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.

Figure 7: 2023 aligned sustainability volumes surged in the LAC region



Source: Climate Bond Initiative

Climate Bonds Standard and Certification Scheme[3]

The Climate Bonds Standard and Certification Scheme is a voluntary labelling scheme for investments that address the challenge of climate change, and are consistent with the goal of limiting global temperature rise to 1.5°C above pre-industrial levels. Launched in 2012, the Standard was initially designed as a mechanism to support confidence in the climate change action credentials of green bonds and other debt instruments and to provide a tool to allow quick investment decision making.

Climate Bonds have certified over USD270bn of Use of Proceeds Green Bonds since the launch of the Certification Scheme. The latest Standard expands Certification coverage to general purpose Assets and Entities and Sustainability-linked debt instruments. Certification under this Standard confirms that debt instruments, assets, or entities meet criteria published under the Climate Bonds Standard. Transparently developed science-based criteria underpin the Scheme and independent assessment is provided by a network of Climate Bonds Approved Verifiers.

3 https://www.climatebonds.net/files/page/files/climate_bonds_expanded_standard_and_certification_scheme_brochure_1.pdf

An international independent Climate Bonds Standard Board, comprised of institutional investor representatives and reporting to the Trustees of the Climate Bonds Initiative, provides oversight and a strong governance framework for the Scheme. The Climate Bonds Standard and Certification Scheme is used as a tool to fight greenwashing.

2. The Key Role of Green Finance in Enhancing Green Energy Solutions

Green finance has been a burgeoning sector since the Paris Agreement and is at the crossroads of financial, socio-economic and environmental challenges. It is hybrid in nature. It uses financial instruments and focuses on environmental issues, while coming under the wider field of so-called “sustainable” finance that assumes a broader approach with the inclusion of socio-economic and governance challenges. It is a catalyst as it facilitates and accelerates the transition to a low-carbon economy. It also includes an increasing range of instruments.

From green bonds to green indices, green loans and capital raising activities, the sector is growing both quantitatively and qualitatively. Green finance embraces the various objectives of public and private actors. It also raises major questions about the future of our societies. Choosing to finance only sectors that are already “green” entails significant socio-economic risks, such as job losses in high-emitting (brown) sectors and stranded assets. Adopting a sequenced approach potentially amounts to locking in polluting activities in the long term and not achieving the Paris Climate Agreement’s objectives (lock-in effect).

In view of the physical risks of climate change (devastation and disasters) and those related to energy transition (stranded assets), climate change is now generally considered as a systematic risk. Public and private actors – institutional investors, banks, regulators, central banks, insurers, credit rating agencies, states, multilateral organizations – are taking action both to better understand the risks posed by climate change, and to capitalize on opportunities in this growing field. Green finance provides the financial sector with instruments to effectively reorient capital towards the low-carbon transition. Against a background of uncertainty about the effects of climate change, green finance also reduces the information asymmetry about risks related to major ecosystem disruptions. The structuring and distribution of “green” products are important growth drivers for many stakeholders and in a wide variety of sectors.

However, many risks and challenges remain. Financial risks, specifically related to high levels of subsidies for the production and use of fossil fuels, and the lack of a single carbon price, structural risks, which hamper the economic attractiveness of sustainable activities, particularly in terms of profitability, and unclear political signals, notably resulting in regulatory uncertainty. Furthermore, the language of green finance remains fragmented and is still relatively vague. There are many reporting frameworks and taxonomies, preventing easy and uniform ownership by stakeholders. Standardized methodologies, requirements and disclosures are critically needed. A common language is required, not only among Europeans but worldwide, to ensure that financing the ecological transition is genuinely effective.

The quality and comparability of non-financial reporting must be significantly improved to ensure its effectiveness. The principle of double materiality of information – financial and non-financial – is crucial. Green finance provides the entire financial system with instruments to accomplish its transition. It also avoids both a "niche" and a lax approach that are conducive to greenwashing and damaging to the sector growth, and, ultimately, to the transitional objective of green finance. As a source of systemic risk, and in view of the challenges of financing the transition, the aim is to ensure that the concept of sustainable finance remains purposeful by integrating environmental, social and governance (ESG) "filters" into the overall operation of capital markets.

There are many risks of intentional or unintentional greenwashing for market actors. Making wrong investment choices, because they are ill-informed about the real nature of sustainability, seeing their reputation discredited in their clients and fund managers' eyes, undermining trust and the fundamentals of green finance.

The European Union has taken the lead on these issues. The European Commission's Action Plan on Financing Sustainable Growth of March 2018 aims to reorient capital flows towards a more sustainable economy, integrate sustainability into financial institutions' risk management and promote transparency and long-term awareness within financial institutions. This Action Plan includes numerous instruments, such as an Ecolabel for financial products, the development of a European standard for green bonds, a so-called "Disclosure" regulation legislating on non-financial reporting by market actors, and the clarification of banking and investment advisors' duties in terms of integrating ESG factors and incorporating sustainability into prudential requirements for banks and insurers.

One of the main instruments is the European "taxonomy" for sustainable economic activities, which is intended to establish a common language for greening the financial sector by covering a wide range of actors and activities, at least on a voluntary basis. This future taxonomy has major global potential that could boost the EU's normative power.

The EU's sustainable finance strategy is over the long term, striving to take as comprehensive a view as possible of financial regulation and climate change, and therefore fully redirect capital flows towards financing the transition. The next few years will be critical for the future of the sector, with work continuing on the European taxonomy, the preparation of delegated acts subsequent to the final recommendations prepared by the EU's Technical Expert Group on Sustainable Finance and the implementation of the European Green Deal.

3. The Outlook and Challenges of Green Finance in Volatile Economic Conditions

The future of green finance is critical to addressing climate change. Bottom-up approaches that enable communities to access funding and green energy sources are essential. To mitigate the risk of climate change, the development finance community must support resilience and adaptation projects alongside mitigation technologies.

Digital financial services and related technologies have been game-changers in increasing financial inclusion, enabling access to capital and energy, and improving the efficiency of transactions. Mobile money has especially unlocked access to new services like off-grid solar energy, positively contributing to climate adaptation and resilience. Examples like Pay-as-you-go off-grid energy, where mobile money has opened up access to a range of new services, is one on many emerging solutions. However, more needs to be done to bridge the energy gap for households and enable access to finance to support communities to build sustainably.

Despite the growth of inclusive digital finance, the proportion of the population without access to clean energy in Africa is increasing. Therefore, sustainable and climate finance should focus on promoting bottom-up approaches that empower communities to impact their lives and fight climate change. This includes providing access to green energy sources coupled with funding, enabling households and businesses to build up credit history and savings while enhancing their quality of life.

The IPCC has urged the financial sector to focus on green finance and create innovative financial products. Green inclusive finance is evolving rapidly to meet development challenges, delivering on the SDGs and addressing climate change. This evolution is expected to involve:

- Testing and launch of innovative financial products,
- Remaining agile to use and stay informed of emerging new technologies,
- Increased collaboration between stakeholders,
- Integration of ESG factors into investment decisions,
- Greater emphasis on impact measurement.

The future is green, and the rise of sustainable finance is proof of that. This approach to finance seeks to balance financial returns with positive social and environmental outcomes, and it is becoming prevalent as we become more aware of the impact our actions have on the environment.

Sustainable finance is not about reducing our carbon footprint or supporting socially responsible causes. It is about creating a more sustainable future for all. It is about integrating ESG considerations into all aspects of financial decision-making. That means analysing a company's ESG performance, engaging with the company to promote better practices, and voting on shareholder proposals related to ESG issues. It is a comprehensive approach to value creation that puts sustainability at the forefront, and the good news is that the movement towards sustainable finance is only going to continue. With the demand for sustainable investment products growing rapidly, and technology making it easier for investors to identify and assess sustainable investment opportunities, the future is looking greener than ever.

One of the key benefits of sustainable finance is that it can help create a more sustainable future for all by promoting business practices that minimize harm caused to the environment and support positive social outcomes. The United Nations Sustainable Development Goals (UNSDGs) are an important part of the sustainable finance movement. These global goals are set by the United Nations to end poverty, protect the planet, and ensure peace and prosperity for all.

Challenges of Green Finance

There are numerous challenges in terms of green finance, such as the fact that there is little regulatory compliance, transition risks, and hesitancy to venture down the path of green

finance due to financial concerns. Indicatively, some of the challenges associated with green finance can be summarized as follows:

- **Lack of Standardization:** Seeing as there is no universal standard for what qualifies as a mode of green finance – it can be hard for investors and consumers alike to differentiate a company that is truly committed to incorporating green finance or which companies are greenwashing customers.
- **Data Availability:** Green finance is relatively new, with the first green bonds only being issued in November 2008 – reliable data regarding green finance is scarce and difficult to quantify which companies are proving to be "successful" in green finance.
- **Risk Assessment:** Pricing for green finance is difficult due to both lack of standardization and data availability.
- **Uncertain Financial Performance:** Green Finance may make some investors hesitant due to their reservations regarding the differences between traditional and green finance. This is because while long-term performance of green finances has proven to be lucrative, the same can't be said for short-term investments.
- **Regulatory Concerns:** Seeing as green finance is predominantly influenced by government policies and regulations, some investors may fear that future environmental regulations could deem the investments less lucrative.
- **Transition Risks:** Seeking to switch to a low-carbon economy will require numerous industries to change their business practices, which can have an impact on investor's portfolios. In addition, customers may change their preferences and technological advancements may not be in line with the needs for green finance, which could further impact investor portfolios.

4. Aligning Sovereign Green Bond Markets with the Energy Transition

Among various financial products that provide funding for projects, sovereign green bonds[4] issued with sovereign guarantees by central governments have gained prominence. Proceeds from sovereign green bonds are used to finance green projects such as non-conventional and renewable energy projects, alternative energy solutions, greenhouse gas emission reduction, climate change mitigation, or reduced use of carbon-based energy

[4] While there is no formal definition, a sovereign green bond can be roughly defined as "a debt instrument issued by the government to borrow money from investors" promising that the funds raised will be utilized for climate or ecosystem-related activities".

sources. Sovereign green bonds receive increasing global attention as governments attempt to meet UN climate change goals.

Sovereign green bonds are a powerful new financial tool that can help protect the global environment. National governments issue these debt instruments to fund projects with favourable climate and environmental benefits. As concerns over climate change and biodiversity loss intensify, sovereign green bonds are increasingly seen as a way for countries to demonstrate climate leadership and work towards their commitments under international agreements like the Paris Agreement.

The concept of governments issuing sovereign green bonds only began in 2016. Of course, these financial instruments are slightly late entrants and slower than their corporate counterparts. These bonds assist governments in funding public projects and realizing sustainable energy objectives that reduce environmental hazards and address the intergenerational trade-off in climate-related policy. Sovereign green bonds are dated securities with a fixed maturity date (tenor) and interest rate. Generally, funds rising through sovereign green bonds are part of the government's overall borrowing programmes.

Sovereign green bonds demonstrate the potential of hybrid financial tools to address interconnected economic and ecological challenges facing governments worldwide. As this emerging asset class continues developing, opportunities to strengthen ties between capital markets and conservation outcomes remain. While countries are newly exploring sovereign green bonds issuance, lessons from other national experiences point to the need for transparency regarding project selection and impact monitoring.

Significant oversight from independent validators also signals the importance of accountability frameworks that build integrity into green finance initiatives. Moving forward, blending disciplines like policy studies, investment analysis and applied ecological science could help evaluate sovereign green bonds programmes through an interdisciplinary lens. This may reveal avenues to make such platforms more receptive to innovations emerging at the science-society interface. Continual reassessment incorporating quantitative metrics and qualitative insights may further optimize strategies for sovereign green bonds to direct capital flow in ways that unlock solutions at the convergence of climate, development and biodiversity priorities.

The greening of sovereign debt is important because a large part of the expected €350 bn in additional annual capital expenditures to achieve net-zero emissions in the EU will need to

be mobilised by the public sector, possibly amounting to 1.8% of annual GDP[5]. In addition to meeting climate-related funding needs, sovereign debt managers must also contain the risks that will arise if their governments manage the transition to a low-carbon economy poorly – which could result in higher borrowing costs or liquidity constraints in debt markets.

Sovereign-debt issuance will need to adapt to these new investor demands that result from the climate transition. A debt-issuance strategy that reflects investors' concerns about climate outcomes would be complicated by the fact that climate targets are largely set at the EU level, though implemented partially at the national level. Ambition and credibility in meeting EU and national climate commitments still vary widely between states.

In an effort to capture this shift in investor motivations, a large number of EU countries and the United Kingdom have issued green bonds since 2016. Yet, the volume of issuance to date is small relative to what will be required of public budgets. Volumes are set to rise. Under the NextGenerationEU programme, the EU could mobilise up to €185 bn in green bond funding for spending in member states. This will come on top of green spending under other EU funds and programmes, which will increasingly absorb countries' capacities to generate and account for public-sector green projects. But this notwithstanding, EU debt issuers lack a single instrument that delivers additional climate-related finance at scale, contains climate transition risks and delivers climate policy outcomes to investors.

The inherent features of sovereign green bonds, in particular relating to restrictions on the use of proceeds raised in capital markets, may make this instrument problematic in the management of fiscal revenues. Problems may become more pronounced if national, EU and other supranational green bond issuance is expanded. A greater volume of green bonds outstanding would complicate sovereign-debt management and the functioning of government bond markets, which should be the bedrock of the EU's capital markets union. In the face of this, sovereign issuers are now examining as an alternative sustainability-linked bonds (SLBs), which reward issuers for outcomes rather than the use of proceeds, and which have been expanding rapidly in corporate bond markets.

A Global Overview of Sovereign Green Bond Market

On November 13, 2023, Brazil became the 50th country to price a GSS+ (green, social, sustainability, sustainability-linked or transition) sovereign deal in alignment with Climate

[5] Klaaßen, L. and Steffen, B. (2023), "Meta-analysis on necessary investment shifts to reach net zero pathways in Europe", *Nature Climate Change* 13: 58-66, https://www.nature.com/articles/s41558-022-01549-5

Bonds' Database Methodologies. Up to 60% of the Use of Proceeds (UoP) of the USD2bn, 7.5-year, sustainability bond were earmarked for expenditures in the environmental categories listed in Brazil's Sovereign Sustainable Bond Framework[6]. The Framework included nine eligible project categories with environmental benefits, and five with social benefits.

Climate Bonds has been on a long-term mission to rally sovereign GSS+ issuance across the globe, as it is understood such deals send a strong policy signal and can catalyse local market growth. The first sovereign green bond was issued by Poland back in 2017, and only 6 years later, the number has climbed to 50.

In May 2019, the Dutch State issued its first Sovereign Green Bond of almost €6bn (and reopened it in January 2020 to add another €1.2bn). The Netherlands is the first country with a triple A rating that issued a green bond. This helped (institutional) investors to invest more easily in this segment which many of their clients have been asking them to do these days.

Table 3: Global sovereign GSS+ issuance by mid-November 2023

Eight LAC countries had priced aligned GSS+ deals by mid-November 2023		Climate Bonds INITIATIVE	
Country	USD bn	Country	USD bn
Chile	54.3	Brazil	2.0
Green	7.4	Green	2.0
SLB	18.4	Ecuador	1.1
Social	21.9	Green	0.7
Sustainability	6.5	Social	0.4
Mexico	12.9	Guatemala	0.5
Sustainability	12.9	Social	0.5
Peru	6.9	Belize	0.4
Social	1.1	Green	0.4
Sustainability	5.8	Barbados	0.1
Colombia	3.0	Green	0.1
Green	0.5		
Social	2.5		
Total			81.1

Source: Climate Bond Initiative

[6] https://www.gov.br/tesouronacional/pt-br/noticias/brazil-launches-sovereign-sustainable-bond-framework

Moreover, Japan issued the first tranche of USD11bn Climate Transition Bond in February 2024[7]. This initiative is a cornerstone of Japan's Green Transformation (GX) programme, aiming to mobilise USD1tn over the next decade in support of advanced sustainable technologies. These efforts align with Japan's commitment to achieving its 2030 greenhouse gas reduction targets and its vision for carbon neutrality by 2050.

Brazil is the 9th country in the Latin America and the Caribbean (LAC) region to issue an aligned sovereign GSS+ deal. While green-labelled bonds dominate Brazil's GSS+ market with 63% of issuance volumes, the choice of a sovereign sustainability bond aligns with broader regional trends. Across LAC, sustainability bonds hold a 43% share, highlighting a rising preference for combining environmental and social expenditures in a single instrument. This emerging trend reflects issuers' inclination to support a just transition in both Brazil and the wider region.

5. The Role of Exchanges in Accelerating the Growth of the Green Bond Market

Exchanges are important for green bond market growth for several reasons, based on a Climate Bonds Initiative report[8]. Firstly, they facilitate investor decisions. By providing financial services such as guidance, training and tools for investors, exchanges can play an impotant role in facilitating investment in climate solutions. The development of the market can be accelerated by the creation of performance benchmarks such as indices, further assisting investors in identifying green finance investment opportunities.

Secondly, exchanges provide access to a wide range of investors, including large institutional investors such as pension funds, mutual funds and insurance companies as well as small and medium-sized institutions and even individuals. Thus, exchanges can support the mobilisation of investor demand for green investment. In addition, listing green bonds on exchanges gives issuers access to a deeper pool of investment capital. By receiving enhanced visibility on exchanges, green bonds issuers are exposed to a far wider segment of potential investors. Exchanges can also provide small and medium enterprises with access to green finance.

[7] https://www.climatebonds.net/resources/reports/japans-climate-transition-bond
[8] https://www.climatebonds.net/files/files/RoleStock%20Exchanges.pdf

Table 4: Stock Exchanges that have launched a dedicated green bond or sustainable bond section

Name of Stock Exchange	Type of Dedicated Section	Launch Date
Oslo Stock Exchange	Green bonds	January 2015
Stockholm Stock Exchange	Sustainable bonds	June 2015
London Stock Exchange	Sustainable bonds	July 2015
Shanghai Stock Exchange	Green bonds	March 2016
Mexico Stock Exchange	Green bonds	August 2016
Luxembourg Stock Exchange	Luxembourg Green Exchange	September 2016
Borsa Italiana	Green and Social bonds	March 2017
Taipei Exchange	Sustainable bonds	May 2017
Johannesburg Stock Exchange	Green bonds	October 2017
Japan Exchange Group	Green and Social bonds	January 2018
Vienna Exchange	Green and Social bonds	March 2018
Nasdaq (Multiple stock exchanges)	Sustainable bonds	May 2018
Swiss Stock Exchange	Green and Sustainability bonds	July 2018
The International Stock Exchange	Sustainable bonds	November 2018
Frankfurt Stock Exchange	Green bonds	November 2018
Santiago Stock Exchange	Green and social bonds	July 2019
Euronext (Multiple stock exchanges)	Green, Sustainable and Social bonds	November 2019
Bombay Stock Exchange	Green bonds	June 2019
Argentina Stock Exchange BYMA	Green, Sustainable and Social bonds	September 2019
Brazil Stock Exchange	Green bonds	September 2019
Nigerian Stock Exchange	Sustainable bonds	October 2019
Hong Kong Exchange	Green, Sustainable and Social bonds	June 2020
Korea Exchange	Green, Sustainable and Social bonds	June 2020
Toronto Stock Exchange	Sustainable bonds	November 2020
Singapore Stock Exchange	Green, Sustainable and Social bonds	n.a
Bolsas y Mercados Españoles (BME)	Green, Sustainable and Social bonds	n.a

Source: Climate Bond Initiative

Thirdly, they improve the liquidity of green bonds. Low liquidity is a barrier to investing in the bond market generally, and in the green bond market in particular. When liquidity is low, it is more difficult to match potential sellers with potential buyers resulting in a more time-consuming process and higher transaction costs. Greater use of "all-to-all" venues such as exchanges enhances liquidity by enabling greater market connectivity and more centralised liquidity than the over-the-counter (OTC) market. Exchanges can also channel the liquidity of retail investors, as in the case of LSE's ORB (Shanks green bond) and the World Bank's sustainable bonds listed on Borsa Italiana. In addition, stock exchanges are situated at the central marketplaces, acting as facilitators between issuers and investors. They are the vital part of the ecosystem which enables overall green bond market growth both domestically and internationally.

Fourthly, exchanges support green bond indices and ETF. A green bond list shows adherence with certain green criteria but it does not track the financial performance of the included

bonds or identify environmental risks embedded in the financial market. Once sufficient market scale has been achieved, introducing one or more green bond indices could make it easier for investors to track the performance of green bonds, and compare returns and volatility with other investments. Exchanges could draw lessons from the experiences of these institutions or develop partnerships with them to establish green bond indices. In time, as the green bond market scales up, such indices could cater to diverse investor interests by developing specific regional or sector focuses. By developing green bond indices, exchanges can enable the development of ETFs or index-linked structured products which require indices. Such market infrastructure also promotes investment and liquidity in the green bond market.

Fifthly, they implement market education and foster dialogue. By providing educational resources and expert assistance, exchanges can assist investors in understanding wider climate change risks and opportunities. Capacity building for issuers and other stakeholders can also be organised to support them in understanding market expectations and interpreting listing requirements. Exchanges can foster dialogue on green bonds between all stakeholders including regulators, investors, issuers, rating agencies, international standard-setting bodies, certifiers and auditors.

6. 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"[9].

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

Map: SE Europe, as Defined by IENE

Source: IENE

Greece

A list of Green Bond issuers in Greece is presented below.

1. **TERNA ENERGY**

Greece's TERNA Energy issued a seven-year €150mn green bond in October 2019[10]. 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.

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

[10] 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

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 origin[11].

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 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.[12]

[11] 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

[12] 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/

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 demand by a broad investor base, is tangible confirmation of the confidence that NBG enjoys, and the general prospects for the Greek economy.[13]

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.[14]

[13] 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

[14] 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

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.

7. Greek Government[15]

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

[15] 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

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

Cyprus

Bank of Cyprus said it has successfully issued its first green bond, more than four times oversubscribed, raising €300mn to fund renewable energy projects, as well as climate-friendly buildings and transport[16]. The 'Green Senior Preferred Notes', issued under the bank's Euro medium-term notes (EMTN) programme, will be listed on the Luxembourg Stock Exchange's Euro MTF market. The five-year EMTN carries a 5% fixed annual coupon and the maturity date of the Notes is May 2, 2029. The bank said in an announcement that the issue was more than four times oversubscribed, with the orderbook reaching €1.3bn. It said the raised funds will be allocated to eligible green projects as described in the bank's Sustainable Finance Framework, which include green buildings, energy efficiency, clean transport and renewable energy.

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

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 producer of electricity generated by Photovoltaic Parks. The amount of Green Bonds issuance will be approximately €5mn.

[16] https://www.financialmirror.com/2024/04/25/e300-mln-bank-of-cyprus-green-bonds-oversubscribed/

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 €244mn[17].

Croatia

A sustainability bond was issued in 2022 by Raffeisenbank 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.

In addition, M+ Group is the first company in Croatia that issued sustainability-linked bonds valued at HRK 300 million (almost €40mn). It is a Zagreb-based provider of business process and technology outsourcing services with operations in 58 countries, including Bosnia and Herzegovina, Romania, Slovenia, Serbia, the United States and Türkiye. The strategic partners in the green bond issue are Erste&Steiermärkische Bank and the European Bank for Reconstruction and Development (EBRD). M+ Group said the other investors include insurance companies and investment funds[18].

M+ Group has undertaken to reduce its carbon emissions by 25% and increase women's representation in management teams to 51%. If the sustainability goals are not met, investors will be paid 0.75 percentage points above the nominal 4.25% interest rate.

[17] 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

[18] https://balkangreenenergynews.com/first-green-bonds-issued-in-croatia/

Bosnia and Herzegovina

The Republic of Srpska Securities Commission has given the go-ahead to Naša Banka to issue Bosnia and Herzegovina's first-ever green bonds. The bonds will be issued on the Banja Luka Stock Exchange, and the bank will seek to raise BAM7mn (about €3.57mn) to finance lending for the purchase of green technology that helps cut CO2 emissions. Naša Banka will issue 70,000 bonds worth BAM 100 each. The maturity period is 7 years, and the annual interest rate is 5.15%[19].

The success of the first ESG bond issue in Bosnia and Herzegovina will be assessed by Sarajevo-based consultancy Enova. The first assessment will be performed after three years, and the issue will be considered successful if at least 60% of the offering is subscribed and paid for within the set deadline. In case Enova determines that the issuer has not met the intended goals, the interest rate is to be increased by 0.20%, to 5.35%, until maturity.

Serbia

In September 2021, the Republic of Serbia issued a €1bn sovereign green bond to finance the country's green agenda. All the proceeds have now been allocated. Notably, out of €990mn in total, 31.9% was assigned to the three budget years before the sale. It is estimated that greenhouse gas emissions savings resulting only from the green bond range between 60,000 and 70,000 tonnes of carbon dioxide per year and 1.5 million tonnes during their entire lifetime. When the other sources of financing are added, the effect is above 3 million tonnes overall[20].

Serbia's Green Bond Framework stipulates that proceeds from such transactions are for the railway and metro network, sewerage, water and wastewater management, flood protection, biodiversity protection, pollution prevention and control, waste management, energy efficiency and renewable energy generation.

Renewable energy had a mere 0.1% share in the investments. The only public call for subsidies for households to install rooftop photovoltaic panels resulted in a combined 3 MW. The other component is a programme for solar thermal collectors and 89 contracts were signed.

[19] https://balkangreenenergynews.com/bosnia-and-herzegovinas-first-green-bonds-get-go-ahead/
[20] https://balkangreenenergynews.com/serbia-spends-most-of-green-bond-proceeds-in-transport-water-wastewater-sectors/

Energy efficiency measures had a 1.6% share in the sum. Five public calls were held for public buildings and two for private ones. The schemes enabled the refurbishment of 89 public buildings with just under 119,000 square meters in total. The authorities counted 20,000 households in the programme.

The transport sector received the most funds, 36.7%. Four railway projects were conducted, two in the waterway sector and one for vehicles. Three electric trains were purchased and 79.4 kilometers of railway was reconstructed. Owners of 395 environmentally friendly vehicles won grants. They were overwhelmingly for passenger cars and light vans, 350 in total.

Sustainable water and wastewater management projects soaked up 29.3% of the proceeds, making it the second in the chart. Serbia constructed or restored 70 million cubic meters of reservoir capacity. Another major recipient was the sector of pollution prevention and control and circular economy – 21.5%. The funds enabled 22 polluted sites to be put into remediation. Their combined size is 1.6 square kilometers.

The remaining 10.8% went to environmental and biodiversity protection and sustainable agriculture. The authorities funded sustainable forest management activities on 279,000 hectares and the protection, restoration or maintenance of 30,000 hectares of land.

Türkiye

The first green bond in Türkiye was issued in 2016 by Turkiye Sinai Kalkinma Bankasi (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 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, Türkiye's two biggest banks also issued green bonds to fund the construction of green buildings and renewable energy projects[21]. 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 maturity[22].

[21] https://ceelegalmatters.com/turkey/21403-the-rise-of-green-finance-in-turkey
[22] 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

7. COP28 and Green Bonds

The 2023 United Nations Climate Change Conference or Conference of the Parties of the UNFCCC, more commonly referred to as COP28, was the 28th United Nations Climate Change conference, held from 30 November until 12 December 2023 at Expo City in Dubai. The conference has been held annually since the first UN climate agreement in 1992. The COP conferences are intended for governments to agree on policies to limit global temperature rises and adapt to impacts associated with climate change.

During COP28, 5 key actions were promoted to redirect investment flows to deliver climate mitigation and resilience globally. These can be summarized as follows:

- **Investors bring climate and transition risks and opportunities to the centre of decision-making.** This will reveal the opportunities opened by the just transition and protect investments from climate-related risks.
- **Development banks unlock USD5tn for green by tilting their own spending and crowding in private finance:** Climate priorities, particularly resilience, are inextricably linked to the Development Finance Institutions' (DFI) priorities of safeguarding social development. The EIB, for example, has already exceeded its 50% green investment target. DFIs can also address project risks in otherwise high-risk markets to crowd in private finance to fund a just transition.
- **Governments switch to green public and private procurement to drive large-scale, price-reducing demand for green products.** Implementing green public procurement and aggregating private demand will scale the market and grow the pipeline of investment opportunities. For example, under South Korea's green procurement programmes, 109 items are subject to minimum green standards.
- **Regulators ensure global interoperability of sustainable finance and risk frameworks to support large-scale, cross-border capital flows.** Governments and regulators can ensure compatibility of taxonomies. Rwanda's green taxonomy, launching at COP28, is interoperable with the EU taxonomy which will allow cross-border investment.
- **Corporates issue green and sustainable bonds to increase access to capital for green and resilient projects.** There is a high unmet demand for 1.5ºC-aligned green bonds. Green bonds have consistently achieved higher oversubscription compared to vanilla equivalents in the primary market for 7 years. Brazil recently became the

50th sovereign to issue a GSS+ bond – sovereign issuance is an important trigger to accelerate markets.

8. EU Adopts Joint Green Bond Standard

The Council adopted a regulation creating a European green bond standard[23], which is very closely aligned to the principles of the Climate Bonds Standard (launched in 2014). The regulation lays down uniform requirements for issuers of bonds that wish to use the designation 'European green bond' or 'EuGB' for their environmentally sustainable bonds.

Environmentally sustainable bonds are one of the main instruments for financing investments related to green technologies, energy efficiency and resource efficiency as well as sustainable transport infrastructure and research infrastructure. European green bonds will be aligned with the EU taxonomy for sustainable activities and made available to investors globally.

The regulation is a further step in implementing the EU's strategy on financing sustainable growth and the transition to a climate-neutral, resource-efficient economy. The new standard will foster consistency and comparability in the green bond market, benefitting both issuers and investors of green bonds.

Issuers will be able to demonstrate that they are funding legitimate green projects aligned with the EU taxonomy. Investors' confidence in green investment will be enhanced thanks to a framework that reduces the risks posed by greenwashing, ultimately stimulating capital flows into environmentally sustainable projects.

The regulation establishes a registration system and supervisory framework for external reviewers of European green bonds. To prevent greenwashing in the green bonds market in general, the regulation also provides for some voluntary disclosure requirements for other environmentally sustainable bonds and sustainability-linked bonds issued in the EU.

All proceeds of European green bonds will need to be invested in economic activities that are aligned with the EU taxonomy for sustainable activities, provided the sectors concerned are already covered by it. For those sectors not yet covered by the EU taxonomy and for

[23] https://www.consilium.europa.eu/en/press/press-releases/2023/10/24/european-green-bonds-council-adopts-new-regulation-to-promote-sustainable-finance/

certain very specific activities there will be a flexibility pocket of 15%. This is to ensure the usability of the European green bond standard from the start of its existence.

The use and the need for this flexibility pocket will be re-evaluated as Europe's transition towards climate neutrality progresses and with the increasing number of attractive and green investment opportunities that are expected to become available in the coming years.

The European Commission issued the first green bond in October 2021, for economic recovery and resilience. The sale of €12bn in debt securities, the biggest until then on a global scale, attracted record demand as well. The European Union intends to finance 30% of its €800bn "NextGenerationEU" investment package by end-2026 with green bonds.

9. IENE's Advisory Role in the Issuance of Green Bonds

As of January 2021, IENE became the first organisation in Greece and SE Europe to be granted Approved Verifier status under the Climate Bond Standard. This is a significant milestone in the development of Green Bond markets in SE Europe. 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.

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).

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