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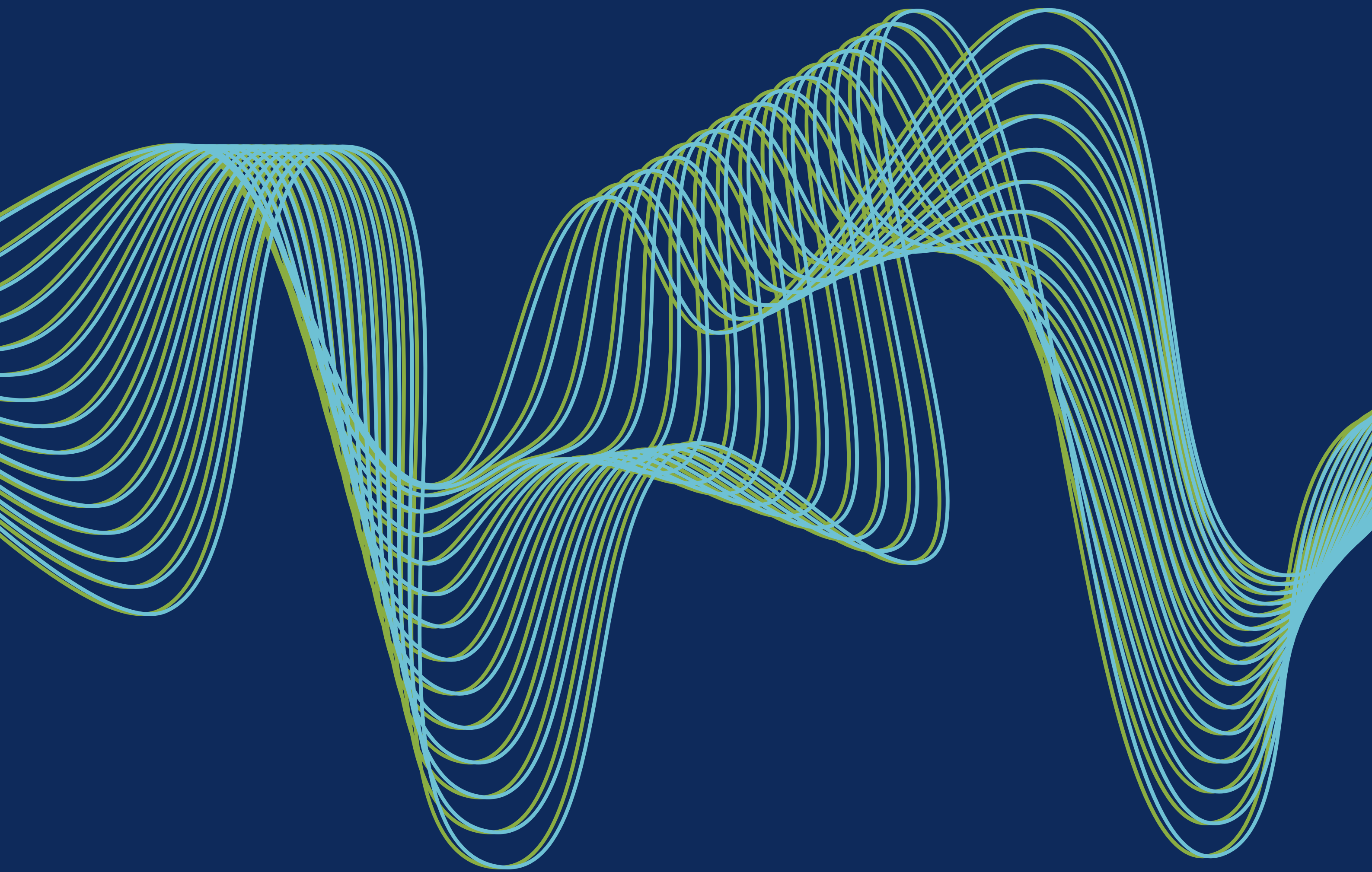


MAINSTREET
PARTNERS

Q3 2022

GSS BONDS REPORT

Europe and the Emerging Markets

OUR EXPERTISE

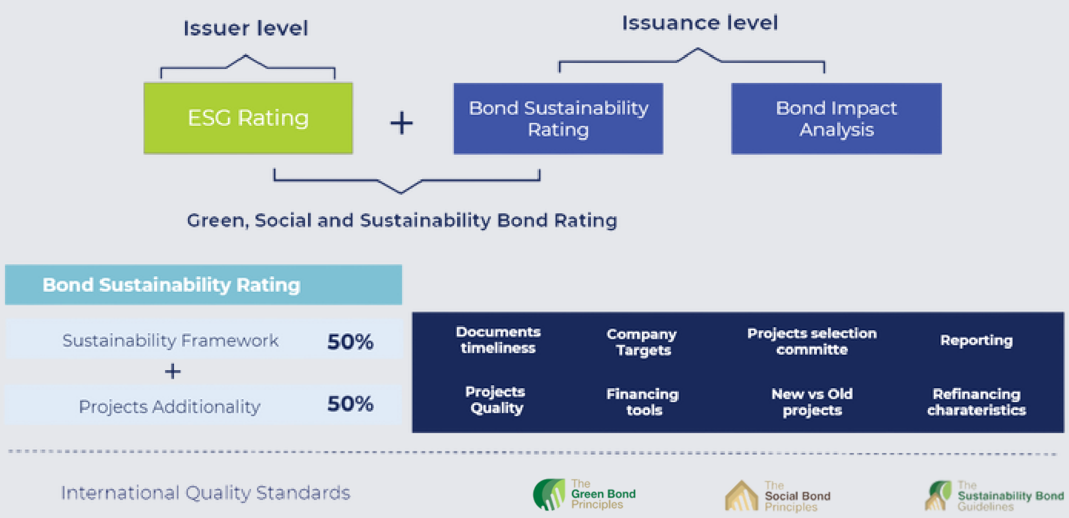
Since 2010, MainStreet Partners' proprietary GSS bonds databases have provided a unique set of tools to investors to measure and manage sustainability risks and KPIs. Our main products are:

IMPACT RESULTS

We aggregate and provide the actual results of each bond extracted for specific publications of the GSS bond issuer. Data can then be aggregated at portfolio level for reporting purposes.

BOND RATINGS

Our ratings of GSS bonds are bond-specific. They derive from an assessment of the GSS framework of each individual bond and the ESG rating of the issuer.

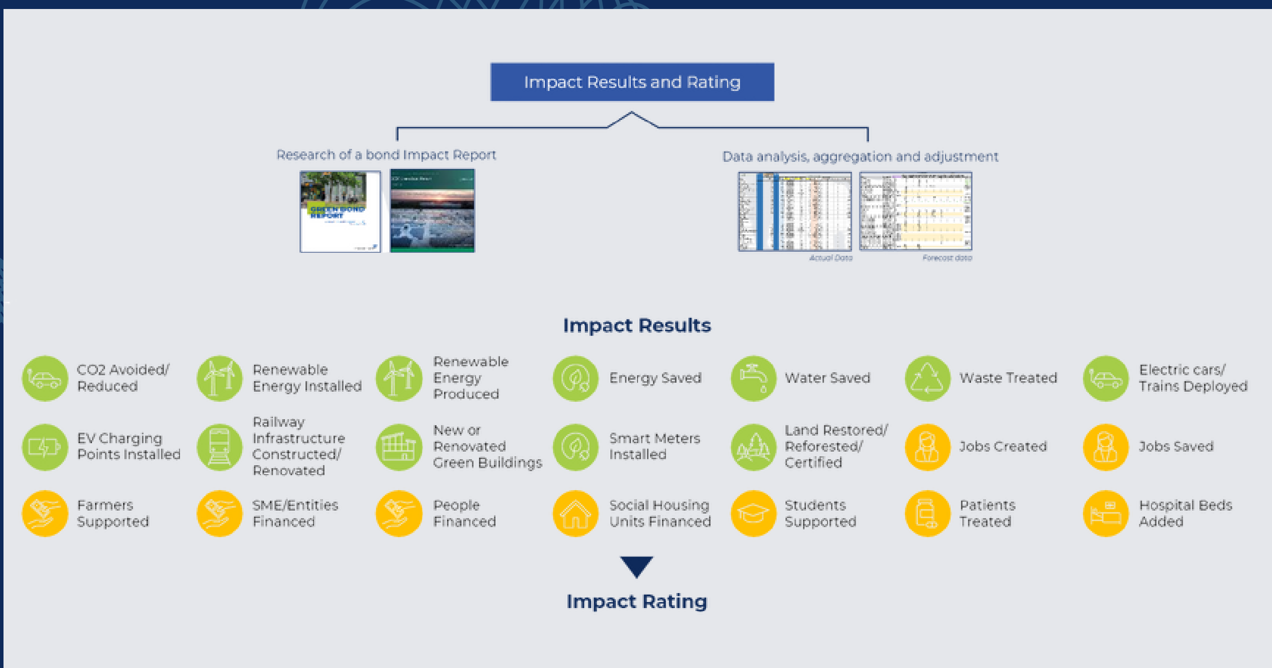


EU TAXONOMY ALIGNMENT

We assess each environmental project financed by a GSS bond and measure its alignment to the regulatory material. For the criteria of “Do-no-significant-harm” and of “Minimum social safeguards” we rely on issuer-level ESG analytics.

IMPACT RATINGS

Our ratings provide an assessment of the use of proceeds of each bond based on their impact results. For all bonds we conduct an ex-ante analysis and, where available, also an analysis of the ex-post impact results realised and communicated by the issuer.



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INTRODUCTION

Welcome to the 3rd edition of our Quarterly GSS Bonds report!

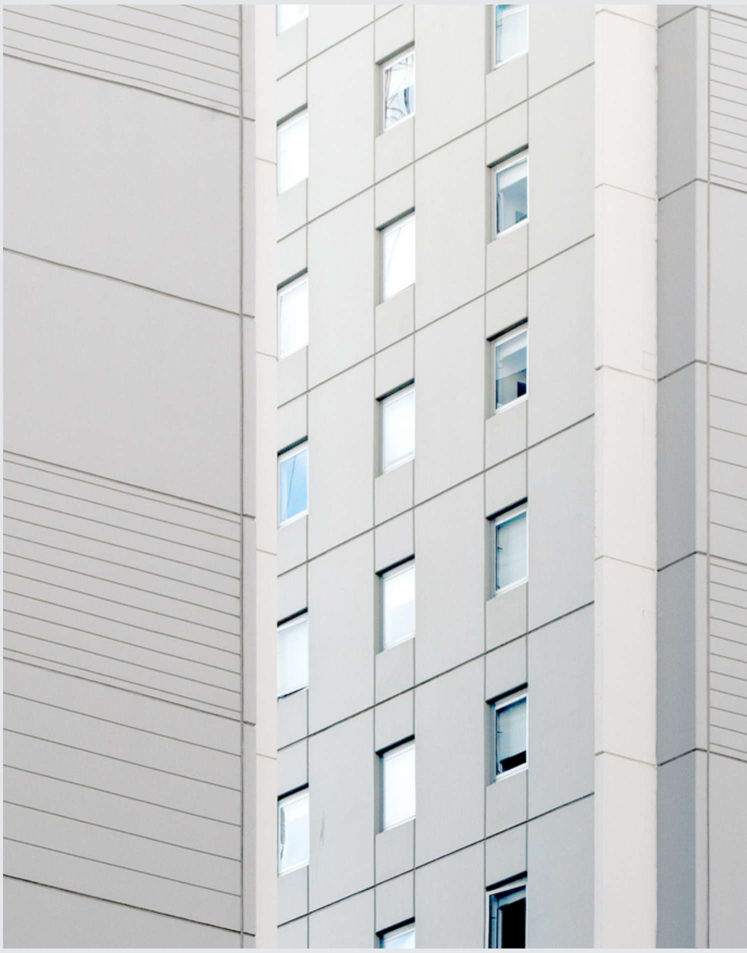
At MainStreet Partners we have over a decade of experience in the sustainable debt market, and we are happy to share our perspective of the current and upcoming dynamics that are fundamentally shaping how corporations and governments are receiving capital from investors.

In this, our latest Quarterly GSS Bonds report, we start by looking at sovereign bonds, in terms of impact metrics tracked and their overall impact results, and how these compare against corporate issuers, on average.

We then provide an extensive overview of two important areas of the GSS Bonds market: Europe and the Emerging Markets. The analysis outlines the effect of spending programs, such as the European Next Generation Fund, on the stock of eligible green projects EU sovereigns can fund, followed by illustrating how Emerging Market issuers play an increasingly important role in the GSS Bonds market, globally, as well as specific trends related to these issuers.

Key insights from the report are:
1) Based on analysing over 5,000 datapoints of GSS Bonds Impact Results, sovereigns were found to report on more metrics (e.g. CO2 avoided) than corporates (3.4 vs 2.6), but their Impact is lower (57th percentile vs 43rd percentile).
2) The ‘cannibalization’ of projects is a real risk to sovereign issuance levels in Europe as EU-driven schemes are reducing the pool of available projects, traditionally financed by sovereign issuers’ Green Bond programmes.
3) The spike in Social Bond issuance during the COVID-19 pandemic could soon be replicated as European governments look to alleviate the burden of the current cost of living crisis.
4) Emerging Market GSS Bonds show heightened resilience. Comparing the first 9 months of the 2022 to 2021, EM issuance fell less than the global market (-24% vs. -31%).
5) Sustainable finance regulatory advancements across Emerging Markets and cooperation between different jurisdictions will be crucial to achieve global climate goals.

We hope you enjoy the report, and we are happy to receive any feedback at *info@mspartners.org*



THE SOVEREIGN GSS ISSUANCE DILEMMA

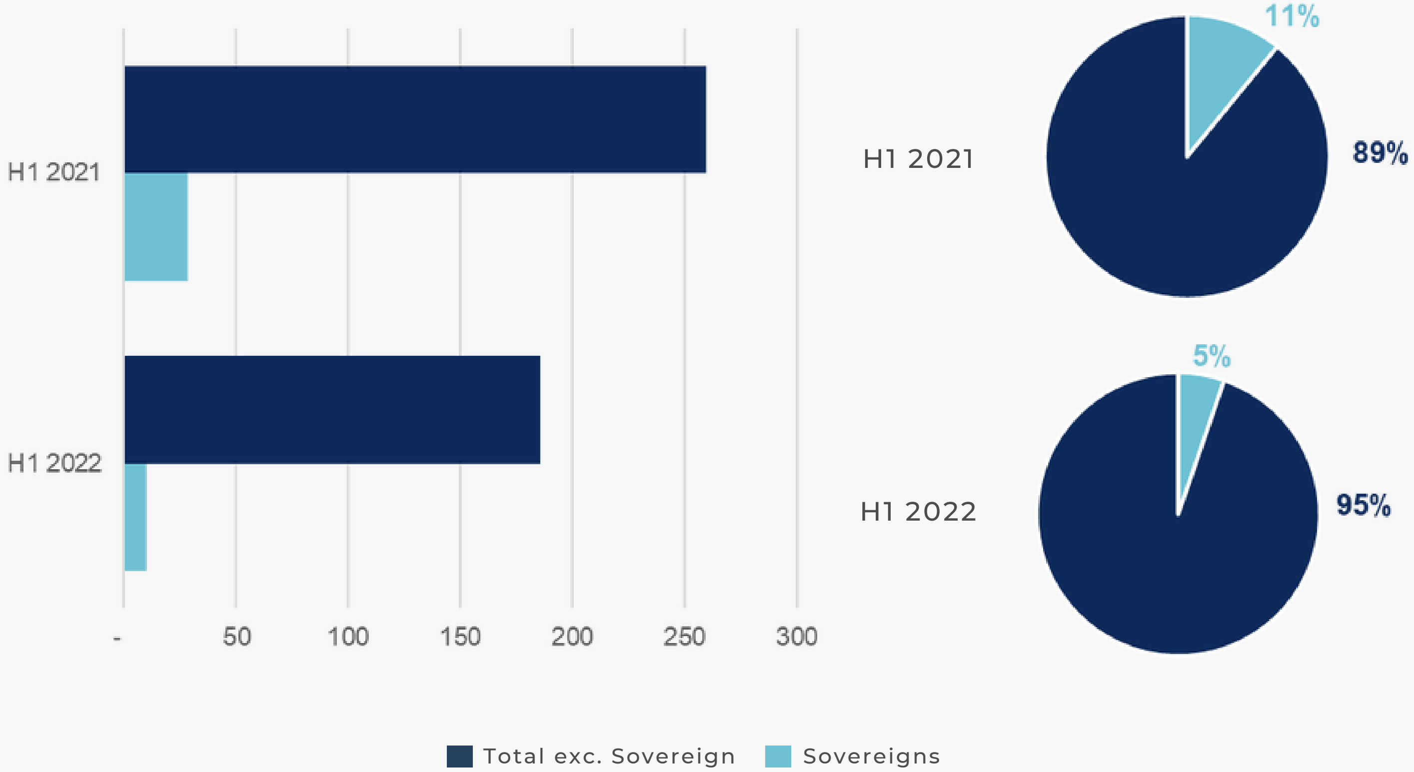
Widespread EU funding and development programs, such as the NextGenerationEU (NGEU) and the newly instigated RePowerEU, will have non-negligible effects on governmental issuance of Green, Social and Sustainability bonds.

Whilst the programmes promise to unlock funds to put towards green projects and accelerate the EU's green transition, without a greater growth in the number of available projects, this may lead to a smaller universe of fundable green projects for governments to fund.

This, in turn, could result in a reduced necessity for governments to issue their own green bonds to finance such projects, which may materialise into a reduction in issuance, given that the same projects are earmarked for EU grants and loans.

The phenomenon could contribute to the fall in share of GSS Bonds issued by sovereigns between the first six months of 2021 and of 2022 (*charts below*).

Green, Social and Sustainability Bonds Issued (USD bn)



Source: MainStreet Partners

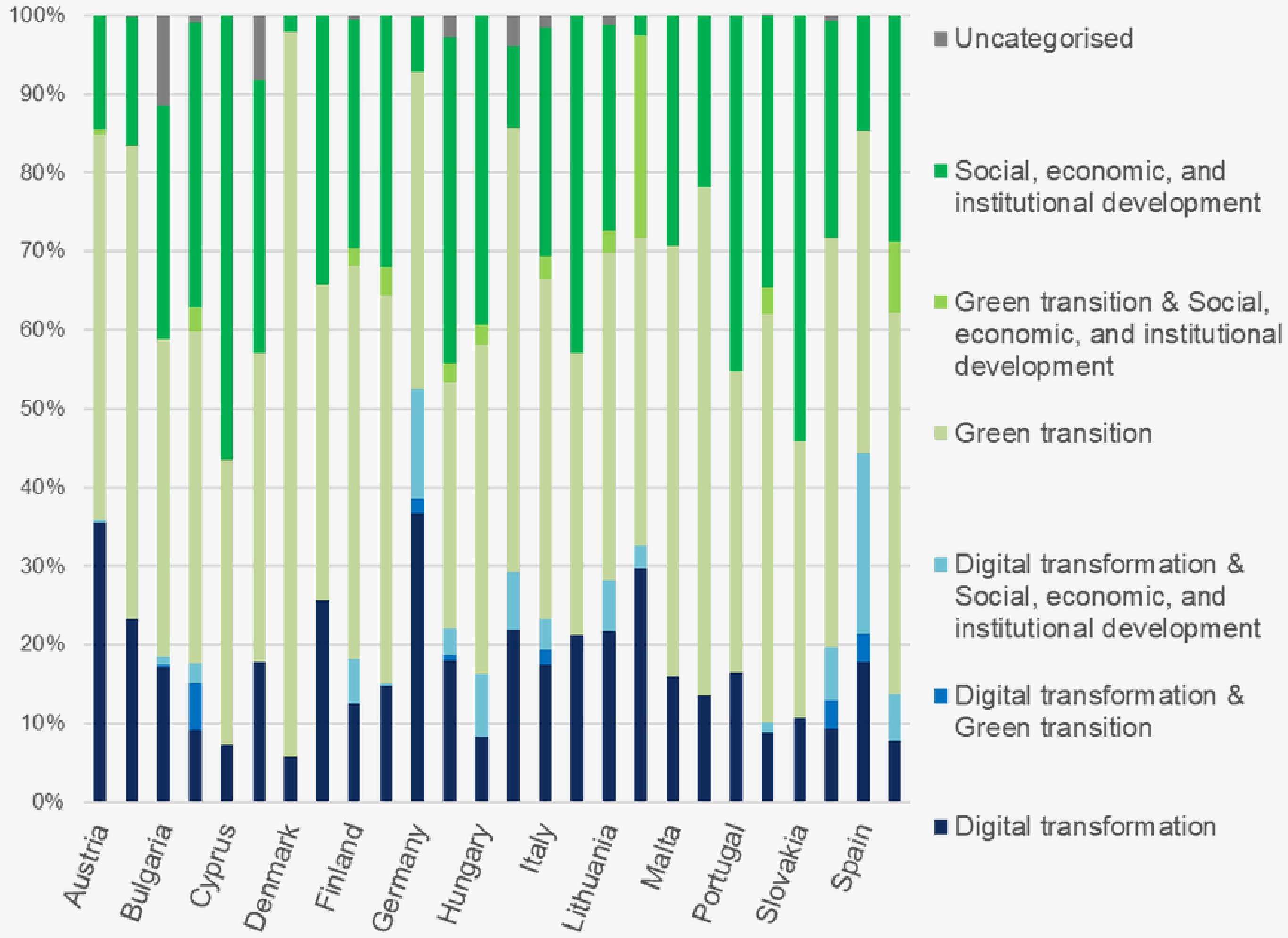
THE RECOVERY AND RESILIENCE FUND (RRF)

A Minimum for Green and digital spending

The Recovery and Resilience Facility (RRF) is largest component of the NGEU, with total grants of EUR340 billion and loans of EUR390 billion. According to the guidelines of the fund, expenditures need to be at least 37% 'green' and 20% 'digital'.

Actual pay-outs from the European Union tend to be disbursed slowly as member states are not always able to use funds immediately. As of June 2022, 25 of 27 member states were allowed funds.

Allocation of Recovery and Resilience Plans



Source: Bruegel

THE RECOVERY AND RESILIENCE FUND (RRF)

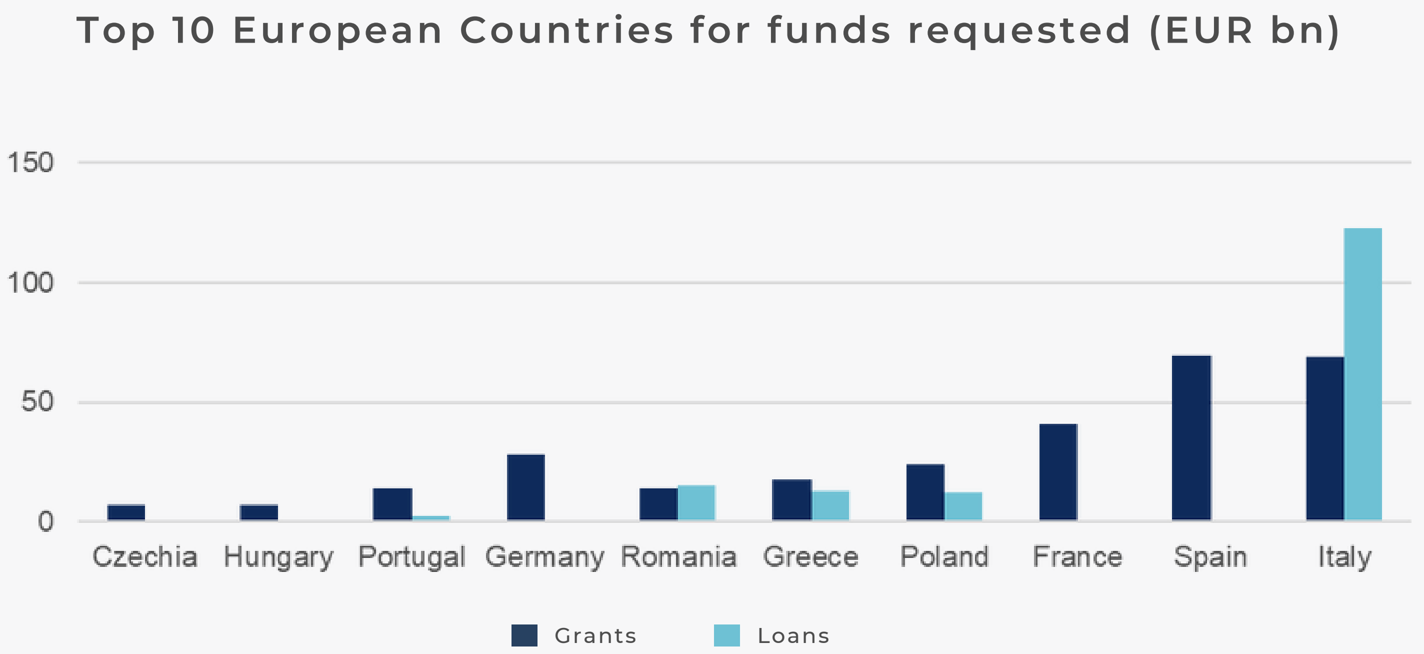
How quickly funds become projects

The absorption rate (AR), an indicator of how quickly a member country is able to spend funds, could be a good interpreter for the extent to which green projects may be 'cannibalized' by European funding programs.

If this were true, this phenomenon would entail a lower number of eligible green projects available for sovereign green bond programs, as projects would be used to obtain grants or loans at favourable rates from the European Union.

As of June 2022, the average AR has been observed at just below 50%, which implies that for the 2014-2020 period, only 50% of the payments or advances from the European fund programmes ERDF and CF were actually paid out.

Italy and Spain have among the lowest ARs and are also the greatest beneficiaries of the RRF funds *(chart below)*. This could lead to longer times to reach full deployment of the program's funds and provide additional uncertainty for sovereign green bond programs.



Source: Bruegel

The 'cannibalization' of sovereign green bond issuances may be even more severe in countries with slow absorption rates, as the speed of project creation and selection is structurally lower in these countries. This may depress green bond issuances further.

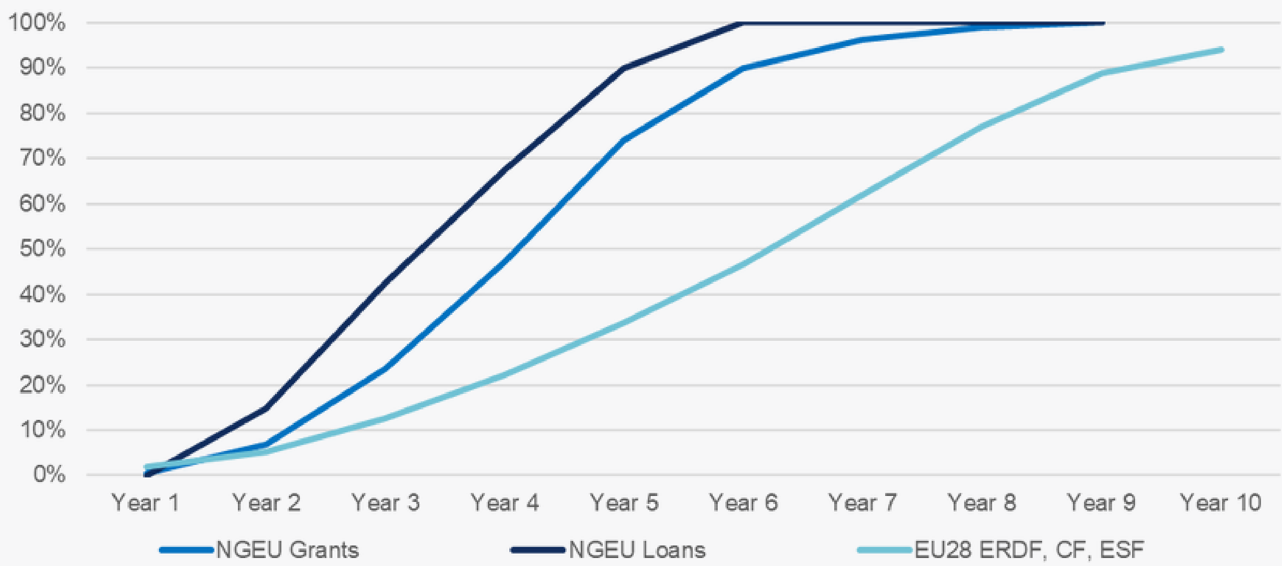
THE RECOVERY AND RESILIENCE FUND (RRF)

Fast payouts affect govenrment expenditure

Around 25% of the Next Generation Fund (NGEU) will be paid out in 2021-2022. What may seem to be a slow disbursement schedule is actually very rapid compared to historical records. The speed of absorption for some of the main European Structural Funds (ERDF, CF, ESF) is considerably slower (*chart below*). In fact, pay-outs for the NGEU occur at a significant faster (steeper) rate compared to EU Structural Funds.

Unsustainably increasing the pay-out rate could exacerbate the problem of 'cannibalization' of green projects in the short term, as countries scramble to fund a larger number of projects that qualify for the RRF so as to utilise the maximum amount of the grant (or loan). This effect may be even more pronounced in countries that received larger amounts of the RRF as a share of their GDP.

Pay-out Rate Schedule of the main EU Funding programs



Source: Bruegel

This tendency can be observed in the distribution of projects funded, as countries with a larger RRF grant tended to diversify into other qualifying projects away from the green and digital expenditures. Countries with a comparatively smaller amount tended to concentrate RRF spending on these two categories. For example, Denmark, which received a low amount of RRF relative its GDP, will focus 92% of expenditures on the green transition category.

The phenomenon described above could reduce the novel Green Bond issuances from European sovereigns, at least until more underlying projects can be found and approved by national authorities.

THE NEXT GENERATION FUND (NGEU)

RePowerEU to reach energy security

RePowerEU reflects the double urgency of transforming the EU power system: ending Russian energy dependence and tackling the climate crisis.

The RRF forms the foundation for RePowerEU, providing EUR225 billion of loan availability.

The Commission intends to make amendments to the existing RRF Regulation to incorporate RePowerEU, and increase the RRF with other funding initiatives, such as with EUR20 billion from EU Emission Trading System allowances.

The main objectives of the RePowerEU program

Increased 2030 Renewable Energy Target from 40% to 45%

- The EU Solar Strategy, aiming to 2x capacity and hit 600GW by 2030
- The Solar Rooftop initiative, making solar panels on public building a legal obligation
- Streamlining the planning permitting process for renewable project, including "go-to areas"

Increased Energy Efficency Target from 9% to 13%

- Behavioural changes, through improved government communication
- Fiscal measures to reduce VAT on efficient heating system, insulation and efficient appliances

Improved Energy Diversification

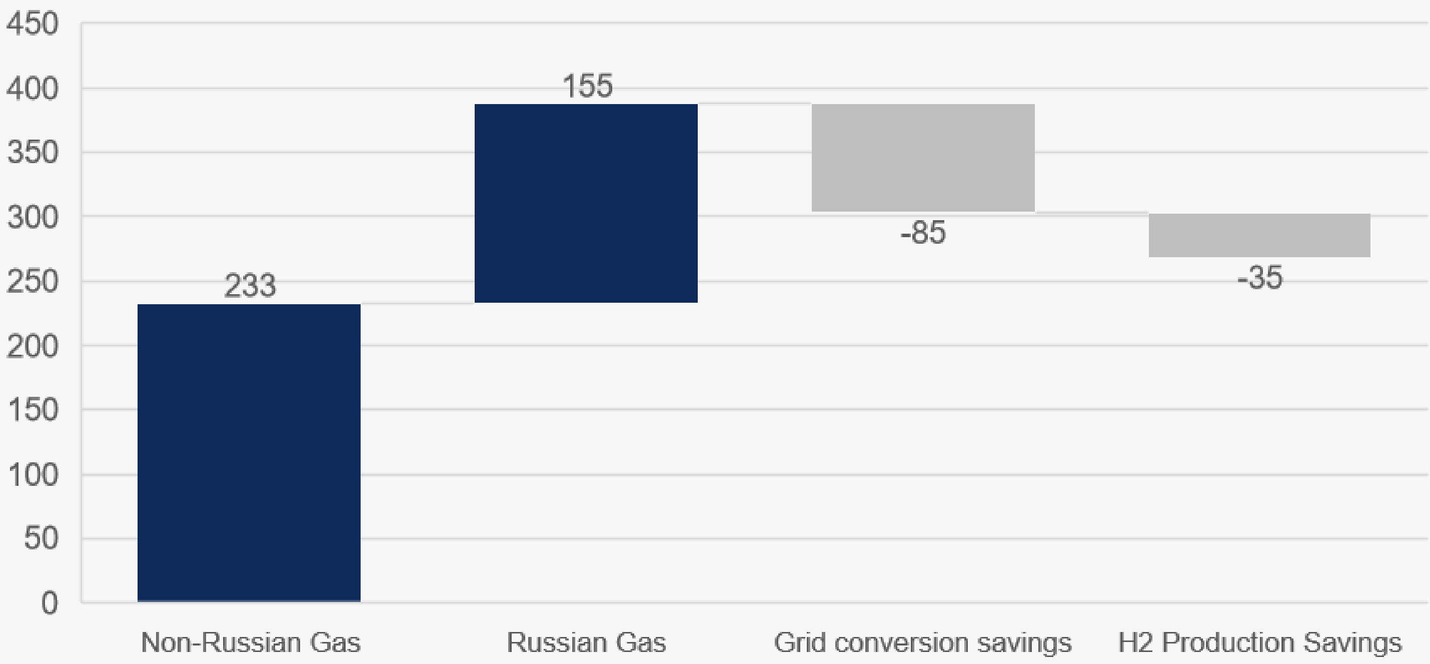
- The EU Energy Platform, enabling pooling of EU energy demand
- The EU External Energy Strategy legislating diversification and seeing an increase in energy diplomacy

THE NEXT GENERATION FUND (NGEU)
RePowerEU and sovereing green bonds

A graphical display of how the RePowerEU initiative would result in diversification of energy supplies away from Russia is shown below, with the majority of the objective being completed through grid conversion savings from the deployment of renewable energy, as well as H2 production savings.

The RePowerEU program may exacerbate the cannibalization of green bond projects already promoted from the NGEU. In fact, the new program aims specifically at energy-related projects, the most common green bond project financed. For example, the EU Solar Strategy, a pillar of the program, could reduce the number of available solar projects to be used in green bond programs.

Current RePowerEU effect on EU gas consumption (billion m^3)



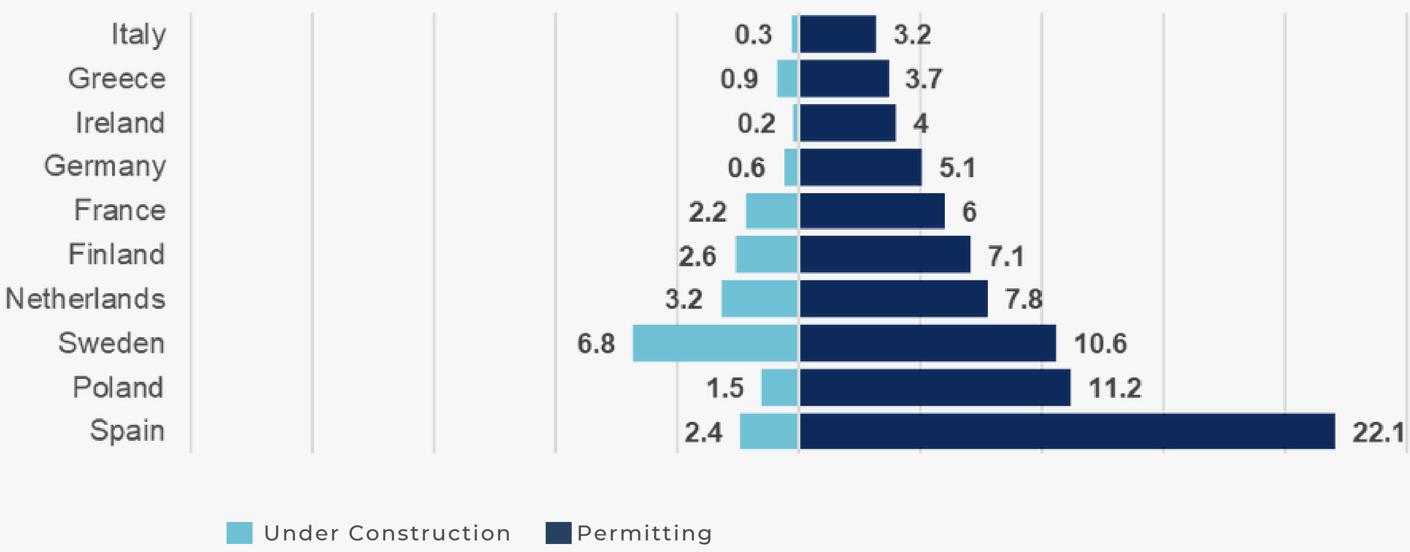
Source: Bellona, EnergyMonitor

THE NEXT GENERATION FUND (NGEU)

Projects permitting process, the elephant in the room

The permitting process is currently a major challenge for European countries. For example, wind capacity waiting for permission is more than 8 times the capacity currently under construction in Germany, Spain, and Poland (*charts below*).

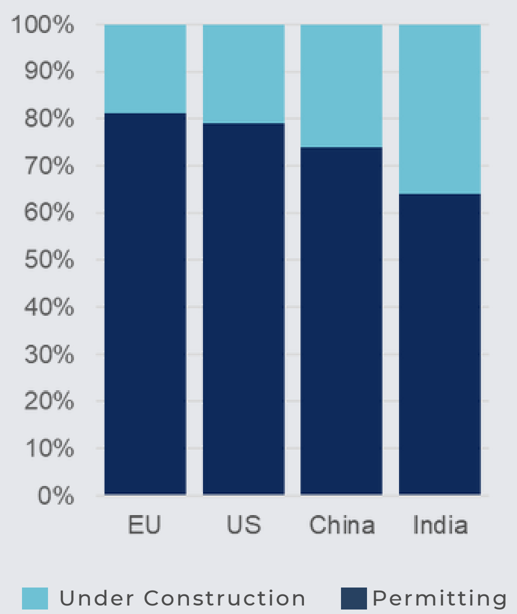
Top 10 EU Countries by Wind Pipeline Capacity



Source: EnergyMonitor

Whilst the International Energy Agency (IEA) acknowledges this issue as a global challenge, it is more acute in the European Union, where 4 in 5 projects financed are still waiting for approval, and just one is under construction.

Any regulatory measure that reduces this backlog should provide a sustained and substantial increase in the growth rate of eligible projects and ultimately reduce the 'cannibalization' effect that funding programs are having on green sovereign issuance.



Source: EnergyMonitor

SURE, EU'S UNEMPLOYMENT PROGRAMME

The health sector and the job market supported with social bonds

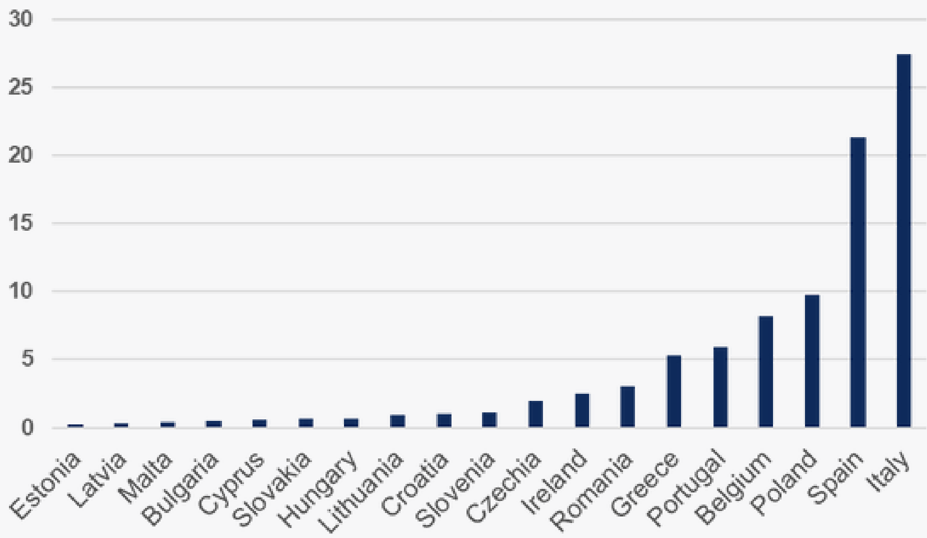
The European program **Support to mitigate Unemployment Risks in an Emergency (known as "SURE")** was designed to ease the labour market conditions exacerbated by the pandemic.

Over EUR100 billion in loans were financed, more than 1 euro in 4 going to Italy. Financing was obtained through Social Bonds, and its effects benefitted over 30% of the total European employment.

"The first SURE transaction was record-breaking – it attracted an order book of EUR233 billion, the largest order book of any deal in the history of global bond markets."

The European Commission

Disbursed loans (EUR bn)



Source: EU SURE, Europa

The spike in Social Bonds issuance experienced during the pandemic could be soon repeated due to the "energy" and cost of living crises. A heightened attention of governments towards people's living conditions could now turn towards increased energy bills – even with the contentious windfall energy level proposed by the EU, that would raise an additional EUR140 billion.
A new Social Bonds issuance programme may further alleviate the burden of 200 million European households. In fact, initiatives in place may not be enough: with yearly gas-generated energy consumption of an average household at approx. 5MWh (15 MWh for all energy), and assuming gas prices at EUR200/MWh, households may spend EUR200 billion just on gas bills. Even if the entire value of the levy was devoted to households this would leave around EUR50 billion of extra costs for EU households, or roughly EUR250 per household for gas.

The success of EU's SURE-Social Bond program, and the widespread cost-of-living crises, may provide the right incentives to see increased sovereign and supranational social issuances in H2 2022 and 2023.

SOVEREIGN ISSUERS REPORT ON MORE IMPACT VARIABLES THAN CORPORATES

A data-driven insight on impact reporting practices

From our experience on gathering Impact Reports for benchmark-sized bonds in the market, sovereign issuers are more prone to disclose the intention to report Impact Results at issuance (85%), compared to corporates (77%).

However, when it comes to reporting practices, among those sovereign issuers who should be reporting Impact, only 66% are. This figure is lower than for corporates (72%).

Impact Reports from sovereigns are generally more informationally intensive, with some spanning over 50 pages.
Based on our complete GSS Bonds database, sovereigns report an average of around 3.4 Impact Variables (e.g. CO2 reduced) per bond, more than corporates (2.6).

The more focussed approach from corporates means that corporates tend to register higher Impact. On average, Impact Results reported by corporates are at the 57th percentile of all Impact Results in our GSS Impact database (over 5000 datapoints). In contrast, Sovereigns are at the 43rd percentile.

The main burden for governments is probably the difficulty of calculating the Impact of each project, which they might have less oversight on. For instance, if we look at two of the largest European economies who recently issued green bonds, Germany committed to publishing Impact Reports every 1-3 years, and therefore has not done so yet. It has only published an Allocation Report back in April 2021.

The UK provided an innovative pre-issuance Impact Report but hasn't issued a conventional (post-issuance) Impact Report yet. In a similar fashion to Germany, it published an Allocation Report (in September 2022). The UK is another issuer that commits to publish an Impact Report less often than yearly. This is a practise that we view as being below market standard, and we hope to see more issuers publishing Impact Reporting on annual basis, until full allocation of proceeds.

On average, Sovereign issuers report on more Impact Variables than corporates, but their overall Impact results are lower.

EUROPEAN POLICY
European Central Bank's TLTRO, a force for change

Overall, the lack of ready availability of green projects may cause a drag on Green Bond issuance in the short term, in terms of volume and quality.
However, over the long term, policy improvements and the possibility of reduced costs of capital for green projects will likely raise the growth rate of viable green projects, which could bring higher sovereign issuance, as well as corporate issuance. This effect may be particularly acute for renewable energy and renewable hydrogen projects within the EU.

In terms of policy, the economic recovery, and the climate change challenge, have been the main focus of recent European funding programs. The European Central Bank (ECB) has also formally included climate change within its mandate. With this respect, another potentially powerful tool that the ECB could use to accelerate the green transition is the ECB's targeted longer-term refinancing operations (TLTRO's).

The TLTRO's currently offer a concessionary rate for borrowing from the ECB in exchange for banks maintaining loan books, but could be refocussed to target transitional efforts, such as clean energy and energy efficiency. This could stimulate green project development by reducing banks' funding costs and enabling them to increase the supply of market financing available to eligible companies.

The ECB has also recently stated it will decarbonise its corporate bond holdings by tilting the reinvestment of the redemption of these holdings to companies with better climate-related performance. This may prove a clear incentive for issuers to improve their green credentials and could also prove to be a boost to Green Bond issuance over the medium to long-term.

EMERGING MARKETS GAINING SHARE
GSS bond issuance holds up despite headwinds

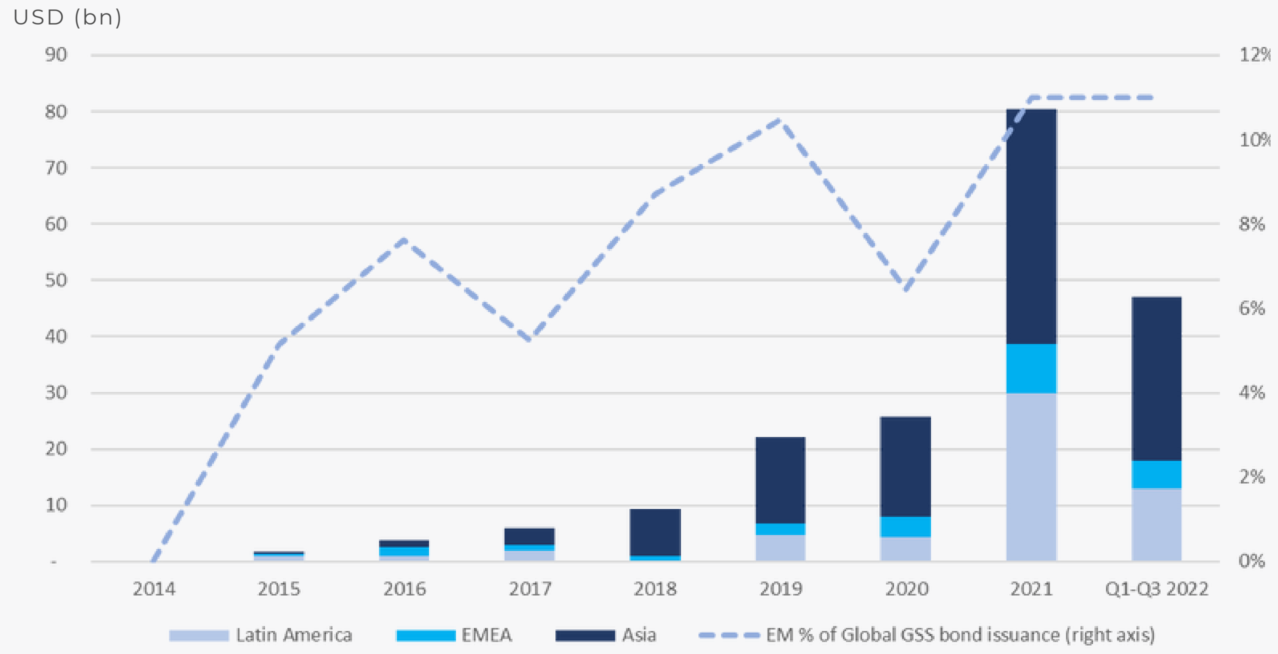
Half-yearly global GSS bond issuance reached USD418 billion as of end of June, which represents a year-on-year decline of 27% compared to H1 2021.

Rising global interest rates and volatile markets have weighed heavily on both the supply and the demand of bonds, but less so in Emerging Markets (*below: Asia, EMEA and Latin America*).

Emerging Markets (EM) borrowers issued a total of USD41 billion up to Q3 of 2022, a 24% decrease compared to Q3 of 2021, constituting a much more contained fall compared to that of the overall market (-31%).

This favoured the already sustained increase in share of EM bonds compared to the total, peaking at 11% in H1 2022 and making GSS bonds no longer a niche market also in these regions.

Annual GSS bond issuance by EM issuers



Source: MainStreet Partners

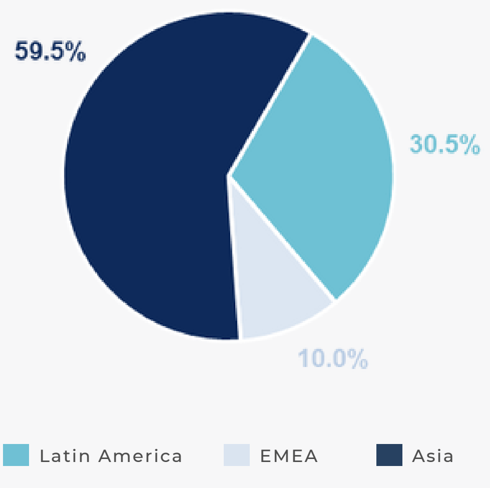
EMERGING MARKETS GAINING SHARE

Growing diversification among issuers

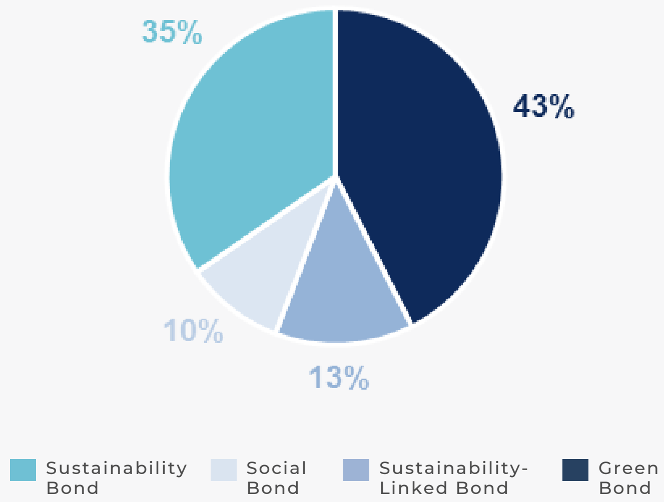
Emerging market GSS bond issuance in the first 6 months of the year has not exceeded last year's volumes – but there is strong potential for growth.
From a regional standpoint, Asian countries still dominate the market, accounting for just under 60%, with China being the largest issuer.

Latin America accounts for 30% of the remaining market share, compared to just 17% in 2020 *(as displayed in the charts below).*

GSS Bonds issued in H1 in Emerging Markets by region



GSS Bonds issued in H1 in Emerging Markets by label



Source: MainStreet Partners

In the first 6 moths of the year, Green bonds remain the preferred label, but accounted "only" for 43% of the total. In the same period, social and sustainability bonds accounted for slightly more than 50%, respectively for USD4 billion and USD14 billion.

As in all markets, Sustainability Linked Bonds (SLBs) have seen incredible growth, reaching a semi-annual volume of USD5 billion, a sharp spike from the USD2bn issued in the whole of 2020.

Chile was the first sovereign to issue an SLBs. In doing so, it underlined its leading role in sustainable finance and innovation, in Latin America.
The deal, which was over 4 times oversubscribed, included targets related to greenhouse emissions and to renewable energy capacity.

EMERGING MARKETS GAINING SHARE
Sustainable Finance regulation

Despite current market headwinds, Emerging Markets are vital for the GSS Bonds market. Sovereign issuers have a key role in issuing bonds and encouraging corporates to follow suit, a phenomenon we have already witnessed in Europe.

Some already notable examples of sovereign EM issuers include the Philippines, Poland, and Peru, as well as Chile, the largest issuer in Latin America with over 10 billion issued in all labels (Green, Social, Sustainability and Sustainability-Linked).

Not only are EM governments directly dealing with some of the most challenging climate mitigation and adaptation risks, but their roles will be paramount in spurring corporate issuances and ultimately financing their countries' energy transitions.

Enhanced sustainable finance regulation, developed, for example through the global platform for Common Ground Taxonomy, will also increase the popularity of GSS Bonds in these regions.

Sustainability regulation has been growing rapidly in the last few years. Green taxonomies have proliferated around the globe, as well as in emerging markets, where there are currently 11 taxonomies (5 in place and 6 under development).

The common aim is to provide transparency and clarity for financial market participants with regards to investments that support the goals set by the Paris Agreement.

TAXONOMY IN PLACE

- Colombia 2022
- China 2021
- Malaysia 2021
- Mongolia 2021
- Russia 2022

TAXONOMY IN DEVELOPMENT

- Mexico
- Kazakhstan
- Chile
- Vietnam
- South Africa
- Indonesia

A notable example of international coordination has been the EU's and China's Common Ground Taxonomy (CGT) efforts, the first attempt between two of the world's largest economies to set the stage for closer alignment on green definitions.

Further improvements may be linked to increase the activities covered, or to feature the European principle of "Do No Significant Harm".

BELIZE'S BLUE 'RESTRUCTURING' BOND

Many countries, developed and developing, are teetering on the edge of a debt crisis, with the COVID-19 pandemic, soaring energy costs and tightening of monetary policy putting many countries in a difficult situation. Total EM debt rose 60% from 2010 to 2019, and a further 26% in 2020 alone. It now stands at 206% of GDP. The IMF estimates that dozens of developing economies are already in debt distress or at high risk of reaching debt distress. With rising costs for supplies, economies struggling to kick start, and political uncertainty, several EM countries have already defaulted in 2022 (e.g. Sri Lanka and Suriname).

Many countries will now face debt restructurings as they look to reduce the pressure on their finances. One of the tools used to battle an unstable high-debt situation, without omitting climate finance, is to "greenify" your debt, embedding sustainability considerations into the country's debt restructuring action plan.

This approach can help governments unlock funds at scale to deliver on their conservation goals and support the well-being of their communities and economies. Belize became the first in the world to do so.

Back in 2021, the country issued its first ever 'Blue bond', at a time where the country had a debt-to-GDP ratio of 133%. This particular transaction helped Belize restructure their USD553 million government debt, whilst unlocking USD4 million per year in support of marine protection.

The country was able to secure USD180 million in funding to help protect 30% of its ocean territory, which includes coral reefs, seagrass beds and other vital marine habitats along the country's Caribbean coast. The transaction now represents the world' largest debt restructuring for marine conservation to-date.

"This deal is huge for Belize, especially during a tremendously difficult time for our economy... Blue Bonds will help us support the vibrant marine life that resides here and maintain the rich biodiversity that is crucial for the health of our ecosystem and the planet".

John Briceño,
Prime Minister of Belize

GSS BONDS AS AN OPPORTUNITY TO HELP BRIDGE AFRICA'S FUNDING GAP

A report by the UN published last year highlighted that the African continent will be among the most severely impacted regions in the world by climate change, which will manifest through widespread water stress and declining agricultural yields throughout the continent. This may exacerbate food insecurity, malnutrition and poverty, affecting millions across the region.

The African Development Bank, in a similar tone, also issued a statement outlining that Africa has been losing between 5 and 15% of its GDP per capita annually as a result of climate change and related impact. Given the risks posed by climate change, African countries will need to make their transition efforts a priority. But doing so will require funding.

The challenges posed by climate change make the case for African states to find new ways to raise capital from investors in a transparent and efficient manner. GSS bonds, given their unique characteristics, can become a new channel that can help Africa fill the existing funding gap. While sharing the core characteristics of traditional bonds, GSS bonds' emphasis on transparency on the use of proceeds may help many countries in the region in their journey towards securing marketing financing for their future green investments.

While the explosive growth of GSS bonds signals positive inroads for facilitating private investment into countries' sustainable development, Africa has been a relatively slow adopter – representing under 1% of global GSS issuance since 2012. This is a surprisingly low share, given the magnitude of Africa's need for sustainable finance.

Despite the marginal growth over 2012-2019, the outlook for the green bonds market in Africa is promising. As of today, 18 green bond have been issued by 8 nations (South Africa, Morocco, Nigeria, Seychelles, Namibia, Kenya, Egypt and Benin). Sovereign issuers, given their size, may attract a wider investor base which could help develop local markets. There is growing consensus among relevant stakeholders that green finance should be a priority in Africa, as it is in other regions. Given the urgency of the challenge ahead, African states may need to consider GSS bonds as an opportunity to close the financing gap.

"Public and private actors must act with scale and speed to help bring Africa's climate goals to fruition"

Barbara Buchner,
Managing Director
Climate Policy Initiative

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All the presented analysis refers to MainStreet Partner's database. Portfolio ratings consider proprietary security ESG rating by MSP. Outliers have been excluded in all the graphs except in the intro and social thematics sections.

Funds for which it was not possible to verify the alignment with a specific article of the Sustainable Finance Disclosure Regulation (SFDR) were considered as funds that do not integrate any kind of sustainability into the investment process and grouped under Article 6.

Main Street Partners adopts a bonus/malus system that is applied to the weighted average ESG rating of the fund's pillars, and that could boost/decrease the final ESG rating of the fund. This explains why on the graphs above there are funds with the top ESG rating without having reached the maximum rating in each pillar.

MAINSTREET PARTNERS GSS DATA PRODUCTS

MainStreet Partners was founded in 2008 with a big dream in mind: to help investors achieve consistent financial returns while improving people's lives and protecting our planet. After 13 years we have become the trusted ESG partner of top tier investors for a simple reason: we provide a one-stop-shop for their Sustainability requirements at portfolio level. Our clients are some of the most sophisticated and leading Wealth Managers, Asset Managers, Investment Banks, and Institutional Investors in the financial industry.

We have two main divisions: Investment Advisory and Portfolio Analytics

We are an independent and dedicated Sustainable Investment Advisor: We have over a decade of experience creating ESG multi-asset and multi-manager portfolios.
We design investment solutions with mutual funds, single stocks and bonds using traditional or absolute return benchmarks.

We deliver a holistic Portfolio Analytics offering: We provide transparent and detailed Fund Sustainability Ratings. We offer bespoke sustainability intelligence aligned with new "green" regulations. We assess and enhance the ESG evaluation of our partners' portfolios.

Learn more at https://www.mspartners.org/
Contact us at info@mspartners.org

ESG EVERYTHING