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Understanding Green Bonds :
From genesis to regulation

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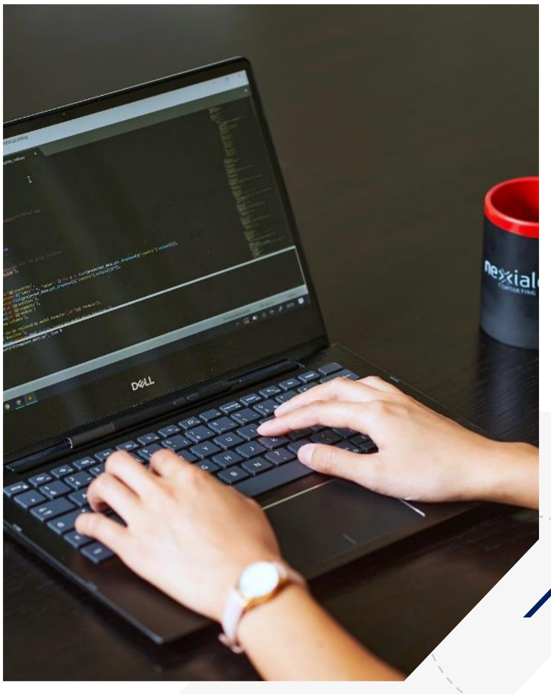
Introduction

Green finance is gradually occupying a larger role in conventional finance. Consequently, a growing number of assets associated with socially responsible investment (SRI) are being developed, including green bonds. Since the issuance of the first revenue bond in 2001, the green bonds market has rapidly expanded, with projections estimating its cumulative worth to reach approximately 5 trillion USD by 2025. Nonetheless, regulatory frameworks are just beginning to emerge for this relatively new and expanding market, exemplified by initiatives like the European Green Bond Standard project.

The primary aim of this note is to outline the current state of the green bonds market and explore upcoming regulatory developments, particularly through the forthcoming European Green Bond Standard.

In Section 1, the concept and features of green bonds are defined and elaborated upon. Section 2 provides an overview of the market's growth over recent decades. The advantages of green bonds are scrutinized in Section 3. Lastly, Section 4 delves into the topic of whether stronger regulation is needed for this burgeoning market.



Green bonds

Since the 2015 Paris Climate Agreement, adopted during the COP 21, which stipulates that parties must make "finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development", green finance (also called sustainable finance) has become a fundamental question in the financial world. Green finance encompasses a set of financial activities, behaviors, and regulations aimed at achieving environmental objectives. Several definitions of green finance exist, but in particular, green finance should facilitate the energy transition and enable the connection of the financial system with the economy and its populations by financing its agents while maintaining a focus on growth objectives.

The Socially responsible investment (SRI), also called social investment, sustainable or responsible investment, green or ethical investing is the application of the principles of sustainable development and green finance to financial investments. As per the French association AFG[1]: "The SRI is an investment that aims to reconcile economic performance and social and environmental impact by financing companies and public entities that contribute to sustainable development regardless of their sector of activity. By influencing the governance and behavior of players, SRI promotes a responsible economy".

SRI has experienced fairly rapid growth in the financial world in recent years. Indeed, the investors see SRI as a way to optimize their investments while limiting the impact on the environment. Green bonds are part of the SRI financial assets. Indeed, green bonds are a crucial tool for financing the ecological transition. But what is exactly a green bond?

As per the French government[2]: "A green bond is a loan issued on the market by a company or a public entity from investors to enable it to finance its projects contributing to the ecological transition (renewable energies, energy efficiency, sustainable management of waste and water, sustainable land use, clean transport, and adaptation to climate change, etc.), especially infrastructure investments".

Figure 1: What is a Green Bond
Source: French Ministry of Ecological Transition website, translated by Nexialog Consulting – 2022

[1] *In July 2013, the French Association for Financial Management (AFG) published, during the Forum for Responsible Investment (FIR), a definition aimed at clarifying the role of SRI.*
[2] *The green bond definition is detailed in the French Ministry of Ecological Transition website.*

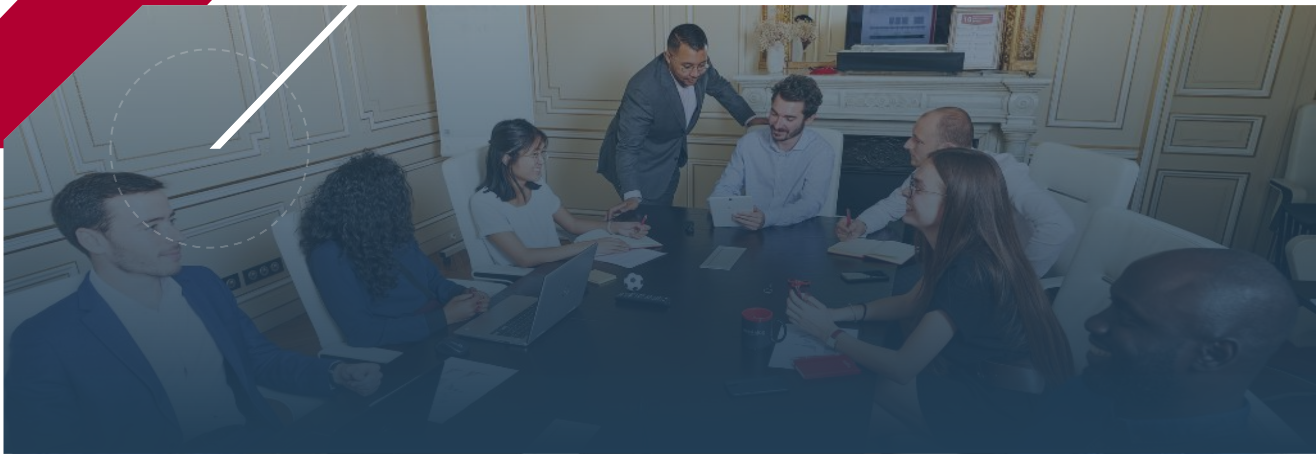
Green bonds, while functioning similarly to conventional bonds, distinguish themselves in two primary ways. Firstly, it differs in terms of the commitments made by the issuers regarding the specific use of the funds collected. Secondly, it sets itself apart through the annual publication of a detailed report outlining the nature and the "green" characteristics of the financed projects[3]. Like an ordinary bond, the green bond ranks higher than shares in the capital structure, because it offers the investor the advantage of being paid first in the event of project failure. Green bonds are particularly attractive to socially responsible investors seeking both financial and environmental benefits..

Although green bonds are defined on principle basis, no precise standard characterizes the environmental dimension of the projects financed. The current challenges therefore relate in particular to the green qualification of projects and to accentuate the reporting. Indeed, since there is no precise regulation about the qualification of a green bond, the green bond market suffers from a lack of transparency regarding the green criteria and qualification of the projects financed. For example, specialists pointed out the lack of a clear definition of the green character, the absence of a framework and the problem of trust in the information transmitted on the monitoring and evaluation of green bonds.

In the "Paris Declaration on Green Bonds", during COP 21 in 2015, some investors pointed out the essential need for the adoption of standard and universal criteria that would serve as a common basis for qualifying green bonds and promoting the growth of this sector. Several initiatives have been launched, to help the various agents navigate this growing market.

Globally, the Green Bond Principles (GBP) and the Climate Bond Standards set several conditions for issuing a green bond. These principles and standards define the good practices and the conditions to be respected, such as the definition of activities eligible for funds raised by green bonds, monitoring of the ecological character of the issue, or annual public reporting to monitor the progress of projects.

The Green Bond Principles (GBP) are published by the International Capital Market Association (ICMA) Group and were written in 2013 by four major international banks, Bank of America Merrill Lynch, Citigroup, JP Morgan Chase and Crédit Agricole CIB and supported by a consortium of various major investment banks. ICMA has regularly published updates of the GBP. The Climate Bond Standard is issued by the Climate Bond Initiative, an international, investor-focused nonprofit organization and was launched at the COP 15 in 2009. The first version of the Climate Bond Standard was released in 2011, followed by a green bond certification scheme created by the Climate Bond Initiative.



In France, the label "Transition énergétique et écologique pour le climat" (TEEC, which can be translated as 'Energy and Ecological Transition for the Climate'), introduced in 2015, applies to funds on the condition that they finance projects falling within the label's nomenclature (as adapted from the Climate Bonds Initiative) and align with the Green Bond Principles.

Despite the major voluntary principles to regulate green bonds, these principles and standards also have limits such as lack of definition of green projects, deep divergence in reporting methodologies, lack of standardization or consensus on the "green" nature of projects to be financed and above all their non-binding nature.

To overcome concerns for traceability and reporting, France involves external experts such as Vigeo Eiris and Oekom Research during the process, to ensure that the bond meets certain criteria.

There is therefore a certain level of maturity in France, where issuers are used to having their procedures validated by external players. However, considering the fast growth of the green bond market, better regulation is becoming essential.

A growing market

The green bonds market is a relatively new but fast-growing market. The really first green bond is a revenue bond[4] issued by a state authority that was approved by the city of San Francisco in 2001 to finance the acceleration of renewable energies (solar and wind power in particular) but also the energy efficiency of housing, tertiary and public buildings. This proposal was then clearly motivated by the need for the city to take significant measures against climate change.

The real first green bond program was launched in 2007 by the European Investment Bank (EIB). The EIB issued an equity index-linked bond, called "Climate Awareness Bond", which became the first fixed income product among socially responsible investments and was aiming to fund renewable energy and energy efficiency projects.

The World Bank and development banks have had a leading role in the issuance of green bonds. Indeed, shortly after the EIB, the World Bank issued in 2008 its first green bond. Since then, the green bond market has known a strong growth.

This trend was accentuated in 2010 with a sharp increase in corporate bond issues launched by utilities, banks, the automotive and energy sectors, and real estate industry; and finally followed by the launch of the first sovereign bonds. On January 24, 2017, France launched the first green sovereign bond (green OAT) with a maturity of 22 years for an amount of 7 billion Euro.

The green bonds market has witnessed significant growth worldwide from 2013: the market has gradually shifted from a relatively slow start following its inception to an impressive growth rate of over 50% in the last five years.

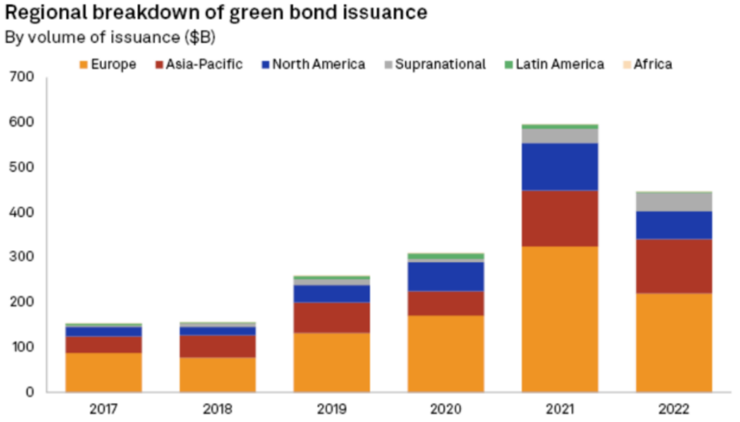


Figure 2: The global Green Bond Market by volume of issuance
Sources: S&P – 2023

[4] A revenue bond is a special type of municipal bond (bond issued by a municipality or a state) distinguished by its guarantee of repayment solely from revenues generated by a specified revenue-generating entity associated with the purpose of the bonds, rather than from a tax.

At the end of 2015, cumulative green bonds market reached a total volume of USD 104B. Less than two years later, global green issuance passed the annual USD 100B mark for the first time in November 2017 during COP23, reaching a cumulative market value of USD 275B.

Despite this rapid market expansion, the COVID 19 pandemic crisis impacted the green bond market in the first half 2020, resulting in a lower growth in 2020 compared to 2019. However, the figures for 2020 set a new record in the green bond market. By December 2020, the market surpassed the cumulative USD 1T milestone.

Figure 3: Green Bond Milestone
Sources: The Climate Bonds Initiative - 2020

In 2021, the previous record figure of US... from 2020 was surpassed with an overall growth of more than 60% to reach USD 596.3B of the green bonds market, according to S&P figures. As of December 2021, the cumulative market reached USD 1.5T in labelled green bonds.

2022 marked the first year of decline in the green bonds market, with a decrease of 25.6% in green bond supply. Globally, issuers sold USD 487.1B worth of green bonds in 2022, down from the USD 596.30B of 2021, according to data from the Climate Bonds Initiative.

Charlotte Edwards, head of ESG FICC research at Barclays, stated in January 2023: "Comparing ESG bond issuance to total corporate supply reveals that the fall in supply has likely not been driven by a lack of desire from companies to issue, or demand from investors to buy. Instead, we think the slowdown has been driven by the broader decline in corporate bond issuance" (cf. figure 4).

The contraction observed in 2022 issuance can also be attributed in part to the global economic shock caused by the energy crisis, putting an end to a period of significantly low rates and bullish markets.

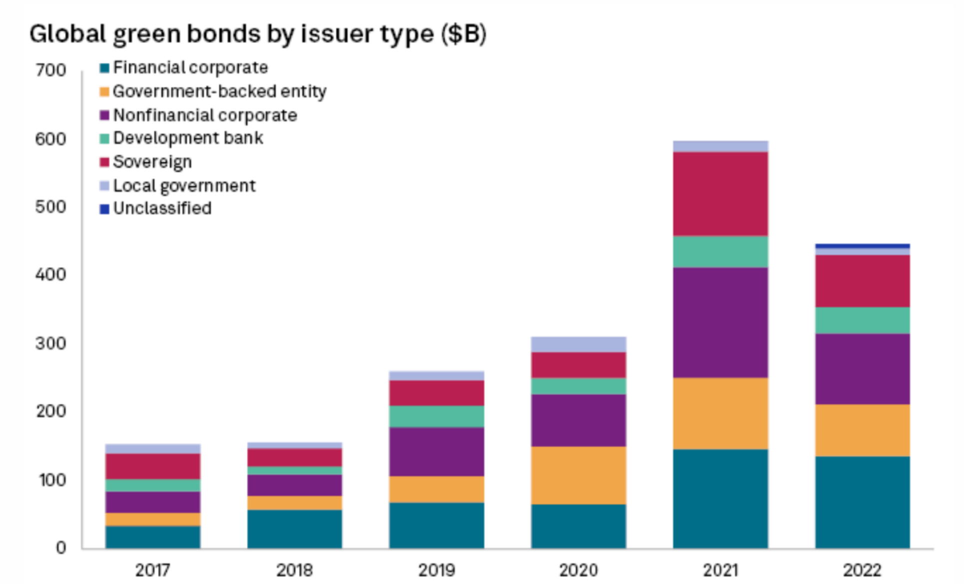


Figure 4: The global Green Bond Market by issuer type
Sources: S&P – 2023

However, global green bond issuance is expected to rebound in 2023 amid supportive policies, a more certain interest rate environment and a catch-up of postponed issuances from last year, according to analysts. Barclays expects corporate green bond issuance to grow by more than 30% in 2023 and reach levels similar to those of 2021. On the demand side, the market should be supported by inflows into fixed income. "The growth of the green bond market this year will depend on a recovery of the global economy", said Yoshihiro Fujii, executive director at the Research Institute for Environmental Finance in Tokyo.

Moreover, Sean Kidney, CEO of Climate Bonds declared: "We are making progress: half the world's bond-issuing countries are now issuing green bonds to finance climate action; and strong 2030-focussed action is finally being taken by the US, the EU, India, China and Japan. We expect 2023 to be a stellar year for both green bond issuance and for climate action on the ground.".

Finally, Trevor Allen, Head of Sustainability Research at Global Markets BNP Paribas said: "We think 2023 could see around USD 600B of green bond issuance, with risks currently to the upside that issuance could go even higher. Green bond issuance will be led by Europe, where we could see as much as 1 in 4 euros raised by utilities coming from green bonds". In the first three months of 2023, USD 122.9B[5] of green bonds was issued, comfortably above the Q4 2022 number of USD 97.5B, reported by The Climate Bond Initiative.

In 2021, the US and Germany maintained their leading first and second positions. France, the third largest green issuing nation in 2020, has been surpassed by China who moved up a spot in 2021. However, in 2022 the first rank changed with China that became the largest green bonds issuer with a volume of USD 76B, followed by Germany and the US, that dropped from USD 77B to USD 50B of green bonds issued.

[5] *On top of the USD 122.9B volume of green bonds recognized in the Q1 figure, a further USD 57.7B of green deals were either excluded from the Climate Bonds Green Bond Database (GBDB) or are classified as pending, awaiting further clarification from the issuer. USD 31B of green bonds priced in Q1 2023 remained on the pending list, awaiting further assessment to determine inclusion in the Climate Bonds GBDB.*

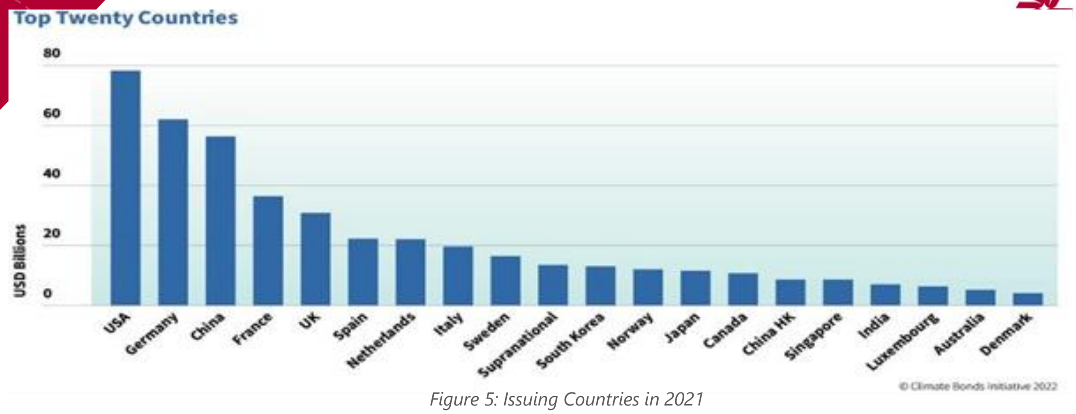


Figure 5: Issuing Countries in 2021
Sources: The Climate Bonds Initiative – 2022

The climate Bond initiative forecasts that the green bond market will continue its exponential growth. After reaching a USD 2.5T milestone as of January 2023, as per the World Bank, it is projected to reach a total issuance of USD 5T in green bonds by 2025. Achieving this milestone early this decade serves as key indicator that capital is being shifted at scale towards climate solutions.

However, despite this optimistic view on the green market growth, the green bond market will face several challenges in the near future. Indeed, although the green market started with an exponential growth, it represents a very small part of the fixed income market. The green bond market is still a market with significant room for development. A second challenge, that the green market needs to face is the low amount of certified issued green bonds. Without any regulation to standardize the green bond market, certifications have emerged, issued by private agents. As per the Climate Bonds Initiative, in late 2021, certified green issuance reached USD 200B, establishing a new milestone for international best practice in green investment.

However, this figure compared to the total green bond market (USD 1.5T) highlights the need for better harmonization and standardization of the green bond market.

A last challenge, which stems from what has just been discussed, concerns the lack of regulation surrounding the green bond market.

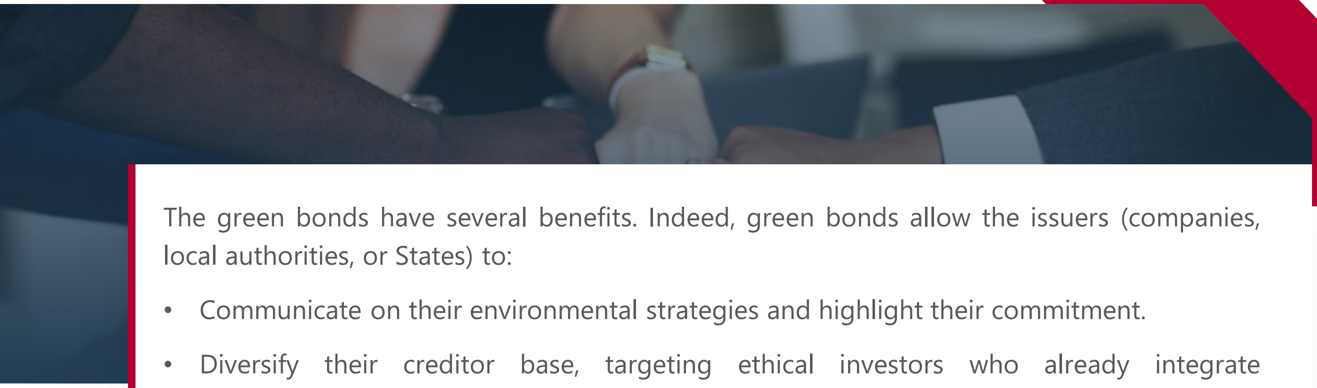
The lack of transparency and traceability of green investments is a source of opacity in these markets, which promotes greenwashing. Greenwashing is the practice consisting of abusively declaring oneself as respectful of the environment or the climate, in the marketing of a product or a communication action, and by extension in the context of a financial green transaction. Certain green bond issues have been controversial and denounced as "greenwashing" by NGOs. There is a pressing need to strengthen standards and create a proper regulation.

Volume of green bond issuance by world's largest economies in FY 2022 ($B)

China	76.25
Germany	60.77
U.S.	50.90
France	20.56
U.K.	18.28
Italy	14.91
Japan	12.42
Canada	11.22
South Korea	7.63
India	1.94

Figure 6: Issuing Countries in 2022
Sources: S&P – 2023

Benefits of green bonds



The green bonds have several benefits. Indeed, green bonds allow the issuers (companies, local authorities, or States) to:

- Communicate on their environmental strategies and highlight their commitment.
- Diversify their creditor base, targeting ethical investors who already integrate environmental, social and governance criteria.
- Improve the quality of dialogue within the organization between financial departments and environmental departments within the structures.

Furthermore, green investments provide investors with the opportunity to:

- Gain a better understanding of a rapidly growing market that incorporates environmental management criteria.
- Meet the increasing demand for investments in ecological transition from savers.

Farah Imrana Hussain, who heads the World Bank Sustainable Finance and ESG (environmental, social and governance) Advisory Services, stated: "Investors are not going to buy a green bond that has a negative impact on the community - or they're not going to buy a social bond that is going to harm the environment. These are really great instruments because they give the issuer the opportunity to make sure they are financing things that have a positive impact on the environment plus in the surrounding communities".

Moreover, Lupin Rahman, the global head of sovereign markets at Pacific Investment Management Company (PIMCO), described the benefits of green bonds as follow: "Emerging market green bonds are an attractive and growing opportunity for fixed income investors, as issuers are distinguishing their sustainability credentials with enhanced targets and clear frameworks to tackle climate transition and climate risks, as well as broader sustainability goals."

A necessary regulation ?

As mentioned in the previous section, the lack of regulation and standardization of the green market, brings the risk of greenwashing, where green funds may not be allocated to genuine green projects. Furthermore, this opacity of the green market, promotes the diversion of investors' money to the benefit of goals or mechanisms that would benefit companies more (even companies that degrade the climate) rather than benefiting the global climate, populations and natural habitats and resources that need protection. The qualification of the green bond is up to the person who issues it, which can lead to potential abuse, raising questions about the effectiveness of green bonds in fulfilling their initial mission.

The lack of standardization and regulation makes the harmonization and transparency of green bonds difficult for investors that are more and more attentive to extra-financial reporting, particularly its environmental aspect. It would therefore appear necessary for the market to structure and strengthen itself by:

- Harmonization of reporting standards either for issuers or for second opinions. This standardization is one of the demands of investors included in the Paris declaration on green bonds. A first step could consist of developing a framework or promoting good practices in this area.
- An analysis of the environmental impact of the projects throughout the duration of the bond life cycle for each execution step (currently the analysis of the impacts is essentially ex-ante and does not consider the real impact of the project on the environment).

Both national and international regulators are conscious of this weakness of the green market. As such, in 2018 the European Union (EU) acted in its Commission's 2018 action plan on financing sustainable growth, the development of a European green bond standard project that is part of the European green deal: establishing such a standard was a recommendation in the final report of a commission high-level Experts group on sustainable finance.

The European Commission established a Technical Expert Group on sustainable finance (TEG) to assist it in developing, in line with the Commission's legislative proposals of May 2018, an EU Green Bond Standard (among other climate related subjects). The TEG started its work in July 2018 and included members from civil society, academia, business, and the finance sector. In June 2019, the Commission Technical Expert Group on sustainable finance (TEG) provided recommendations on this subject in its final report on EU Green Bond Standard. In March 2020, the TEG published a usability guide for the EU Green Bond Standard.

In the context of the public consultation on the renewed sustainable finance strategy, the Commission launched a targeted consultation, between June 12th and October 2nd, 2020, on the establishment of an EU Green Bond standard, using the work of the TEG. Finally, on July 6th, 2021, the Commission proposed a Regulation on a voluntary European Green Bond Standard (EU GBS). This proposal will create a voluntary standard available to all issuers (private and sovereigns) to help financing sustainable investments. The European green bond standard (EU GBS) is a voluntary standard to help scale up and raise the environmental ambitions of the green bond market.

The Commission's proposal includes two distinct features that could bring further stringency and integrity to the green bond market. First, under this Standard, issuers would have to allocate 100% of the proceeds to economic activities aligned with the European green taxonomy requirements. Second, a new supervisory regime would be created for external reviewers to ensure that issuers using the Standard are following the Regulation requirements.

Following the Commission's proposal, the text has been submitted to the classic interinstitutional negotiations for the adoption of EU legislation. The European Parliament assigned its Committee on Economic and Monetary Affairs (ECON) as the responsible committee for this Standard and appointed the Member of the European Parliament Paul Tang as rapporteur.

The European Central Bank (ECB) was asked by the European Parliament, on October 14th, 2021, to provide an opinion on the Commission legislative proposal. The ECB opinion was released on November 5th, 2021. On November 30th, 2021, the rapporteur published his draft report on the Commission proposal for a regulation of the European Parliament and of the Council on European green bonds.

The rapporteur proposes, among other proposals, the obligation for issuers to elaborate transition plans to reach net-zero by 2050 and to also adhere to other entity-level sustainability requirements. Furthermore, European Green Bonds should not fund fossil gas- or nuclear-powered energy plants.

The rapporteur further proposes additional requirements to strengthen the independence of external reviewer and avoid possible conflicts of interest but also measures to stimulate a deep and liquid market for European green bonds.

Figure 7: European Legislative timeline of the EU Green Bond Standard

The Council has agreed its position on April 8th, 2022, and the European Parliament's Committee on Economic and Monetary Affairs (ECON) has voted on its own version on May 16th, 2022. Finally on May 20th, 2022, the Committee report was tabled for European Parliament's plenary, 1st reading. On June 6th, 2022, the Committee decision to enter interinstitutional negotiations was announced in plenary (Rule 71). Subsequently, on June 8th, 2022, the Committee decision to enter interinstitutional negotiations was confirmed by plenary (Rule 71) and taking the form of tripartite meetings between the Parliament, the Council and the Commission.

The amended proposal seeks to better regulate the entire green bond market, to improve its supervision and to reduce "green washing", rather than only establishing the European Green Bond label.

Following the vote, the rapporteur Paul Tang said, "Parliament is giving a clear signal before negotiations with Council. The European Green Bond Standard needs to be fully aligned with the EU taxonomy for it to become the gold standard in the international green bond market. And with transition plans, we put European Green Bonds at the heart of companies' transitions to a sustainable economy. We are serious about ending greenwashing. When this regulation becomes law, simply saying your firm's bond is green will no longer be good enough. The committee also voted to proceed with negotiations with the member states to hammer out a deal.

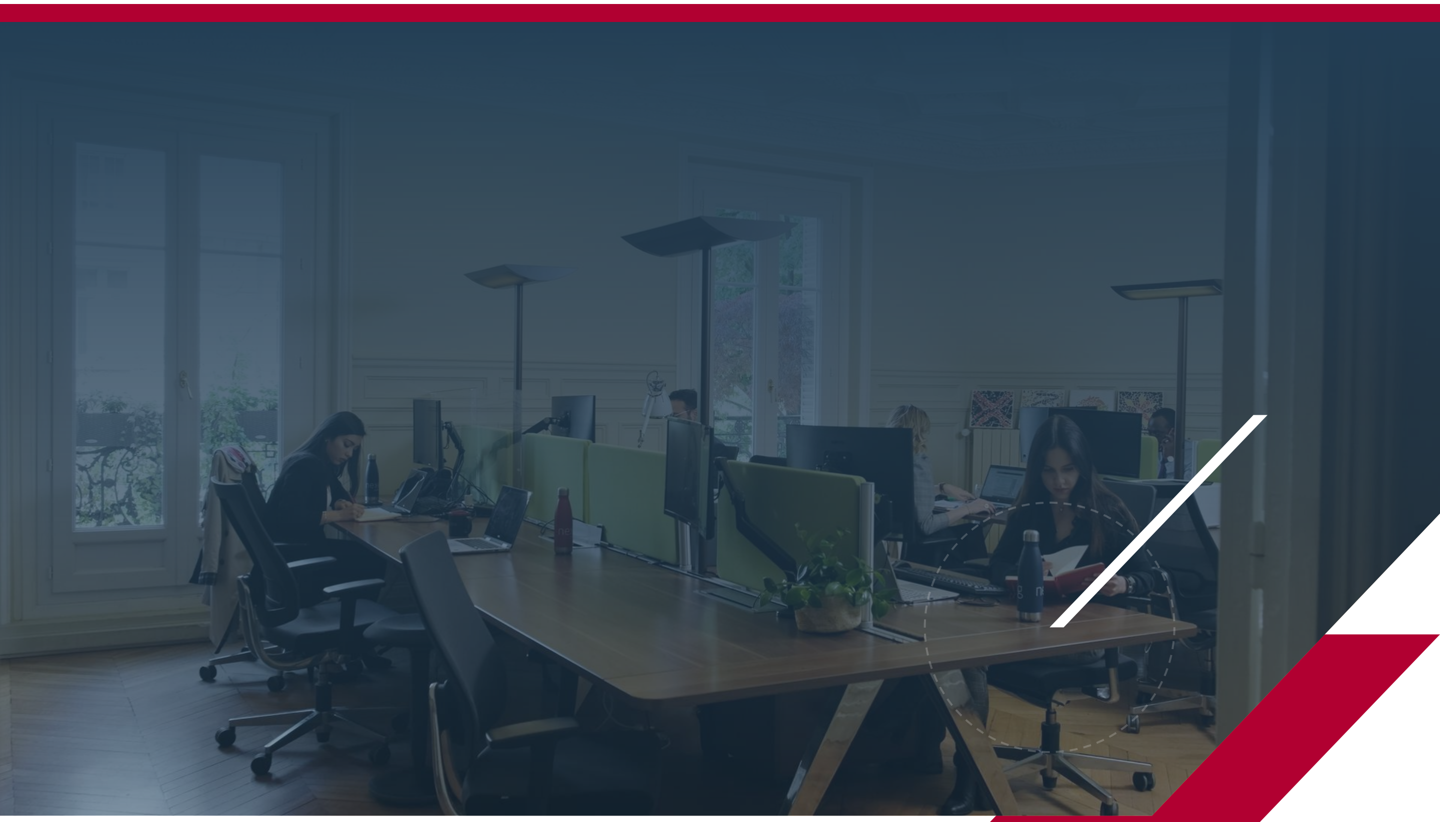
Once every contentious point is reviewed, the legislators deliver the definitive version of the text for adoption by the Commission. As such, trialogue negotiations started on June 2022 and after months of dialogue, a provisional agreement on the European green bonds standard was reached on February 23rd, 2023, by the EU Parliament, the EU Council, and the EU Commission.

Elisabeth Svantesson, Minister for Finance of Sweden, stated, following the provisional agreement: "The new standard which we are setting will be useful for 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. And investors buying the bonds will be able to more easily assess, compare and trust that their investments are sustainable, thereby reducing the risks posed by greenwashing".

Under the provisional agreement, all proceeds of EU green bonds standard will need to be invested in economic activities that are aligned with the EU taxonomy. For ~~the~~ sectors not yet covered by the EU taxonomy and for certain very specific activities there will be a flexibility pocket of 15% in order to ensure the usability of the European green bond standard from the start of its existence.

According to the press release following the provisional agreement, “the use and the need for this flexibility pocket will be re-evaluated as Europe’s transition towards climate neutrality progresses and with the ever-increasing number of attractive and green investment opportunities that are expected to become available in the coming years”.

The agreement is provisional as it still needs to be confirmed by the Council and the European Parliament and adopted by both institutions before its final version. It will, then, start applying 12 months after its entry into force. It is expected that the legislative proposal may enter into application in late 2023 or early 2024. The green market regulation is a (necessary) newcomer in the green world, it is only in its genesis.



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